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Military Review

MISSION.

The MILITARY REVIEW disseminates modern military thought and current Army doctrine concerning command and staff procedures of the division and higher echelons and provides a forum for articles which stimulate military thinking. Authors, civilian and military alike, are encouraged to submit articles which will assist in the fulfillment of this mission.

POLICY.

Unless otherwise indicated, the views expressed in the original articles in this magazine are those of the individual authors and not those of the Department of the Army or the U. S. Army Command and General Staff College.

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SAUCE FOR THE GANDER

Major Reginald Hargreaves, *British Army, Retired*

Verily, when blind men guide we lose our way.

—Arab Proverb

IT IS a point of conjecture whether tackling only one-half of a problem is not, in the long run, even more dangerous than ignoring it altogether.

This is an issue which has been given particular pertinence by the publication of a work * dealing with the present-day education of senior officers of the armed forces for policy roles. That such a course of instruction is highly necessary under modern conditions is scarcely to be denied. For in these days the distinction between politics and strategy diminishes progressively the nearer to the summit it approaches.

Until relatively recent times the small but devoted band of Ameican military and naval officers—like their British counterparts—were largely insulated from the policymakers whose decisions governed their actions. They received their orders after no more than perfunctory consultation with the relevant State Department as to their validity and the feasibility of carrying them out with the means available.

With the wider responsibilities assumed by the United States in her onerous role of leading world power, the decision that the service chiefs should participate in the formulation of policy, and, on occasion, fulfill politicio-military assignments, is no more than elementary wisdom at a time when the prehensile aims of Communist-imperialism have turned the entire globe into an armed camp. It is only with full knowledge of a given policy's objectives, as well as the limitations of the current logistical background—that is, the monetary, industrial, and technological resources available—that the military leaders can organize the fighting forces appropriate for the support of a predetermined line of action. Diplomacy can never be stronger than the armed force held in readiness to implement it.

It follows that if the military are excluded from policy formulation, it can only be by a happy accident that they have the appropriate armed might available at any given moment. Unless you know what is in another person's mind, you cannot intelligently anticipate his needs, only guess at them. And in international affairs, guessing is dangerous.

It can be said of this half of the problem, therefore, that it is being dealt with practically and on sound, constructive lines.

The Other Side

But what of the other half? After all, "what's sauce for the goose is sauce for

The need has never been more urgent and more acute for the civilian policymaker to have a full and knowledgeable appreciation of the fundamentals of military logistics, military doctrine, and military art

* *Soldiers and Scholars.* John W. Masland and Laurence J. Radway. Princeton University Press, Princeton, New Jersey.

the gander." Therefore, it is perfectly reasonable to inquire what steps are being taken to educate the civilian policymaker in those military facts of life, without a good working knowledge of which all his planning adds up to little more than rootless academicism.

It has been and remains one of the peculiarities of the politician that he has only to be appointed to executive office to start laying down the law on matters it has taken his military subordinates a lifetime of study and experience even partially to master. Automatically esteeming himself an expert on matters for which, prior to his assumption of office, he had scarcely spared a thought, his intervention on the practical level of policy implementation oftentimes is ill-informed and frequently attended by the most disastrous consequences. Indeed, the spectacle of the supremely confident but militarily uninstructed politician overruling the martial decisions of his service advisors is reminiscent of nothing so much as a guinea pig trying to instruct a squirrel how best to manage its tail. Yet it is a spectacle which history has witnessed countless times.

In the War of Independence, for example, the Board of War tabled the fantastic suggestion that a new set of generals—to be nominated by themselves—should be entrusted with command every six months. Even Benjamin Franklin—of all people—betrayed his usual good sense by recommending the substitution of bows and arrows for the musket as a feasible measure of economy.

On the British side a plan was formulated to cut off the New England States by an advance of a body of troops from Canada at the same time as another contingent moved up the Hudson, the point of juncture being Albany. The coordination of this design was left to Lord Germain, the British War Minister in London. As it transpired, orders were duly drawn up and forwarded to "Gentleman Johnny" Burgoyne in Quebec. But those for "Good-natured Billy" Howe in New York were never dispatched. The "fair copying" not having been completed at the hour at which my lord Germain elected to leave his office, the dispatch could not be signed. By the time the Secretary for War returned to town the documents had been shuffled out of sight, and thereafter were forgotten completely. So Howe marched off to capture—and be captured by—Philadelphia, while Burgoyne struggled through the North American wilderness to meet overwhelming defeat at Saratoga.

Henry Dundas

Less than a couple of decades later, with the French Revolutionary forces in Flanders confronted with the armies of the First Coalition, the activities of the British contingent suffered perpetual blight owing to the "inspired" intervention of Henry Dundas, Secretary of State for War. After the fall of Valenciennes, the road to Paris and victory over the forces of subversion lay wide open. But as the Allied field commanders were on the point of launching their drive at what Clausewitz described as "the pit of the French stomach," orders arrived from "Scotch Harry" which countermanded the stroke and committed the British troops to a 100-mile march *right across the face of the enemy forces*—a maneuver that any "shavetail" would rightly regard as an open invitation to disaster.

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Behind this egregious directive lay a plan to "make the war popular" by capture of the port of Dunkerque, an entirely unnecessary venture since the Allies already enjoyed access to the far more capacious port of Antwerp. For once the responsibility did not rest on "Scotch Harry's" shoulders, but on those of Lord Chancellor Loughborough, an individual whose only claim to attention hitherto had rested on his entirely ineffectual attempt to browbeat Benjamin Franklin.

Lacking in anything like adequate naval support—that had been overlooked—the enterprise against Dunkerque turned out a costly failure, as was only to be expected. Typical of "Scotch Harry's" efforts to bolster it up was the dispatch of a newly enrolled and entirely untrained regiment as a reinforcement to the besiegers. It was only when the men had been hustled aboard their transports that they were discovered to be unprovided with either weapons or equipment.

With this exhibition of muddle and ineptitude developing before their eyes, it was asking a lot of the military leaders to abide by the rule cherished by all democratic regimes—that in any matters of dispute the decisions of the civil executive must override the designs put forward by the soldier.

At the other end of the same theater of war, be it noted, when a Representative of the Convention sought to interfere with the dispositions of the 23-year-old artillery colonel, Napoleon Bonaparte, he met with a very dusty answer. "Attend to your own business," the little Corsican told him brusquely, "and leave me to mind mine. This battery will remain where it is; and I will make myself responsible for its success."

In this instance, at least, the military man's repudiation of ignorant civilian interference was justified fully by results.

In 1802 the extremely shaky Peace of Amiens, which even George III had the commonsense to perceive was no more than "an experimental peace," offered sufficient excuse for the Pitt Administration to indulge in the favorite activity of all democratic governments—swinging cuts in all the country's armed forces. These reductions were carried through on so comprehensive a scale, and at such a rate, that when hostilities broke out again 14 months later, Britain was hard put to it to scrape together sufficient troops to man her coasts against invasion.

As General George C. Marshall wryly commented, "History has repeatedly proved that it is not with the brass hats but with the brass heads that the danger to a country lies." Indeed, it takes a degree of military education to which the politician can rarely be persuaded to submit himself, to realize that "the wise man may lay aside his arms, but he does not fling them away."

In effect, so far as the Allies were concerned, had the civil administration troubled to inform itself of the elementary principles by which warfare must be conducted, victory over the forces of disruption could have been achieved in 1794. As it was, another 20 years of costly and avoidable war had to be endured before the military succeeded in defeating both the enemy abroad and the obstructionists in their respective cabinets. As Cicero never ceased to emphasize, "Valour in the field is of small use unless there be wise councils at home."

Later Examples

The reluctance of the politician to acquaint himself with the rudiments of the military art and the measures to be taken to ensure a sound posture of defense is not a characteristic peculiar to the 18th century. More recent times have been generous in instances of an unfamiliarity with "the other man's job," and what it entails, of which the people's representatives have been guilty.

At one moment during the course of the War Between the States, Secretary Stan-

ton issued an order that *all* the Union forces in contact with the Confederates should attack on a duly specified date, wherever they might be, and regardless of the local tactical situation at the time.

At the outbreak of the Spanish-American War, wholly unjustified fears of the enemy capacity to raid the ports and commerce of the United States' Atlantic coast led, through misguided political pressure, to the dissipation of the country's extremely limited naval resources in inadequate screening forces. This was in direct disregard of the professional advice tendered by the Naval War Board, well aware that "to try and defend all is to end by defending nothing." The situation was remedied ultimately by the Spanish Admiral Cervera's inability to develop any threat in American waters, rather than through a sudden accretion of informed intelligence on the part of the State Department concerned.

Pleas Ignored

Meanwhile, all General Shafter's pleas not to crowd the military camps with unwanted volunteers—who could be neither housed, equipped, nor trained—had been ignored. It was "bad politics" to deny enlistment to thousands of eager patriots. Needed or not, they must be encouraged to join the colors, even if many of them did not get into uniform.

A quarter of a century later the politicians' approach to the technicalities of warfare exhibited a similar ignorance of the basic fundamentals of strategy, tactics, and the means employed against an enemy.

In 1915, for example, at the height of the scandal over the shortage of high-explosive shell on the Western Front, two British Parliamentary representatives, Mr. McMaster and Mr. Shirley Benn, were sent over to France especially to inquire into the matter. The depths of the knowledge of matters military they brought to their responsible task was bleakly revealed when McMaster solemnly inquired of Sir Douglas Haig if the British artillery "still used the round cannon ball."

Lloyd George

With Premier Asquith's supersession by David Lloyd George, it was speedily brought home to those in responsible military command that the great Wallenstein was not exaggerating when he pronounced that, "A commander in the field can always be sure of more war with the Ministries than with the enemy." Although Lloyd George was unfamiliar with even the elementals of strategy and logistics, he was much too cocksure and impatient to lend himself to instruction. In consequence, he bedeviled the entire course of the war with schemes for furthering operations of such fantastic impracticability that they seem incredible in retrospect.

If he was not advocating grandiose flank attacks on the Western Front by way of the pathless Julian Alps, he was pressing for an amphibious landing on the Baltic coast to drive at the German flank and rear. The fact that troops are unable to operate in a roadless terrain in which it is impossible to transport supplies was as lost on him as the consideration that an amphibious expedition demands an enormous mass of shipping, such as was never available throughout his tenure of office.

Thwarted where these two grotesque projects were concerned, his next proposal was to transfer troops from the stagnant winter front in France and Flanders for operations elsewhere under less hampering meteorological conditions. The objection that the transport of even a couple of divisions, *with their supplies*, would demand more shipping than he could ever hope to lay his hands on, in no way served to abate his enthusiasm. In the outcome, considerable bodies of troops laboriously were transferred to the Balkans where they remained virtually inactive, while

dying off like flies from the prevailing scourge of malaria.

It is, indeed, more often in their unillumined approach to the logistical implications of a suggested venture, than in their miscalculations regarding the capabilities of the troops themselves, that the politicians betray their innate inability to grapple with reality.

World War II

The personal relationship between the service chiefs and the leading members of the Administration was a good deal less strained in World War II than in the earlier conflict. Generally speaking, too, there was a greater tendency to place reliance upon the professional counsel tendered by the chiefs of staff appointed to advise how best to translate policy into terms of strategy.

For all that, it was a very clouded military vision which encouraged Mr. Chamberlain to greet the Führer's successful Norwegian coup with the comment, "Hitler has missed the bus."

Thereafter, the futile attempt to sustain Norway with inadequate forces, further handicapped by insufficient air cover, offered a striking proof that political expediency is the Judas of sound strategy.

Even less excuse can be advanced for that admixture of sentimentality and strategic myopia which committed a British expeditionary force to the attempted "preservation" of Greece. For this was contrary to all measured military counsel, and in the teeth of the Greeks' own comprehensible reluctance to court reprisals by going through the short-lived motions of being "rescued."

In the outcome a considerably harder fate was visited on the Greeks than they might otherwise have incurred. In the Western Desert, General Wavell, who had hitherto swept all before him, being left with little more than a corporal's guard, was hurled back on the defensive. Singapore fell for want of the planes, men, and supplies frittered away under the shadow of the Pindus Mountains. The unprotected capital ships *Prince of Wales* and *Repulse* were sunk for lack of the fighter cover that had been sacrificed uselessly in Thessaly. The aftermath of Crete and its costly evacuation gravely threatened Britain's precarious hold on the eastern Mediterranean, and turned the Indian Ocean into an enemy lake. Through his humiliating defeats in the Far East the white man "lost face" to so serious a degree that it is questionable if his prestige has not vanished for all time.

Later Stages

In the later stages of the war a clearer insight into the military implications involved undoubtedly would have restrained the Allied leaders from declaring, without consultation with their chiefs of staff, that a defeated Germany could only secure peace on the basis of unconditional surrender. As Geyer von Schweppenburg has cogently pointed out, such an ultimatum provided "a welcome buttress to the already crumbling Hitler system." The atom bombs dropped on Hiroshima and Nagasaki undoubtedly had the effect of preserving many American lives from the injury and death attendant on the invasion of a hostile land. From this total, however, must be subtracted the sum of those lost by the prolongation of the war in Europe, begotten of this selfsame formula of unconditional surrender. For it scarcely needs a François Rabelais to remind us that "You should never drive your enemy to despair; a desperate people will sell their lives as dearly as a desperate man."

Thereafter, it was a purely policy decision—that ignored the immediate military as it did the long-term post bellum aspects of the problem—which induced the Allies to leave the capital of the Reich as an island in the Russian sea: an error which led in due course to the emergency measure of the Berlin Airlift.

Equally, it was a political decision, without regard for the military considerations involved, which halted General MacArthur's bomber force short of the Yalu riverline—a directive which led ultimately to the substitution of stalemate for outright victory.

These, of course, were decisions arrived at on the highest executive level; and not to be gainsaid if it is accepted that "in the decisive moments of history the ideas of the statesman must take precedence of those of the soldier." It is permissible to submit, however, that had the policymakers concerned added to their natural gifts a sound training in military affairs, their decisions might well have been considerably more constructive and farsighted.

Need to Know

Students at Washington's National War College include members of the State Departments as well as officers of the fighting forces, and the same is true of the equivalent British Imperial Defense College. By this means an admirable opportunity is presented to certain elements among the policymakers to assimilate much of that military "know-how" which is essential to the efficient discharge of their responsibilities.

So far, so good, but the scope of the experiment could be expanded greatly with considerable advantage. For example, it would be of the greatest value were State Department representatives, on a generous scale, attached for a period of instruction to operational fleet units and active service Army, Marine Corps, and Air Force formations "to see how the wheels go round" on the spot. As the celebrated Roman General Lucius Paulus said of the civil representative of his own day: "Let him be furnished with a ship, a horse and a tent. But if he thinks this too much trouble and prefers the repose of life . . . let him not assume the office of pilot."

A little thought renders it clear past any peradventure that concentration on the wider indoctrination of the "career man," the permanent State Department official, would be likely to yield by far the most fruitful and enduring dividends. In the long run effective power rests less with the ephemeral politician than with the permanent official. Ministers come and ministers go in all administrations. Whatever the dominion they may exercise throughout their temporary overlordship, the real authority resides with the individual who enjoys continuity of service, the State Department "career man," who serves as guide and mentor, goad and brakesman to his hierarchical superior.

Not that the power and influence of the man holding ministerial office—whatever the duration of his trusteeship—is to be underrated. Policy can be revitalized, or sent right off the rails, in a remarkably short space of time.

What, then, can be done with the ministerial policymaker of today, too senior —and maybe too complacent—to submit himself to the laborious process of expanding his grasp of the fundamentals of military logistics and doctrine?

What can be done about the great mass of Congressmen and members of the British Parliament from whom the hierarchy must periodically be replenished? What scheme exists for their highly essential instruction in the fundamentals of the military art?

It would seem that no provision for study and enlightenment has been made at the level where it is most pressingly needed. Omniscience still is all too readily taken for granted. But what reason have we to believe that the alleged omniscience of today differs in any material respect from the dilettantism of yesterday?

Conclusion

The need for a full and knowledgeable appreciation of what the military can and cannot do, and the minimum means re-

quired to carry policy decisions into execution, has never been more urgent and acute. If the military are willing and ready to play their part in seeking a wider understanding of "the other man's job," they have a right to expect that the politician should respond by lending himself to reciprocal instruction.

A branch of the General Staff College solely devoted to instructing politicians in the fundamental (military) facts of life would much more than justify itself—providing always that the attendance of anyone earmarked for ministerial office were made compulsory.

We live in parlous times; and only through a mutual understanding can we build the politico-military team so necessary for the preservation of the principles upon which the free world is based.

The free world's massive deterrent to all-out nuclear war may not deter limited or disguised aggression. Local wars, fomented civil strife, military intimidation, and similar forms of limited operations are all down in the Soviet book as very practical methods by which they might achieve their ultimate purpose without ever seriously risking our use of the nuclear retaliatory power at our command. The Soviets have been employing this strategy for well over a decade, during which they and their allies engaged in eight local wars and military actions for Communist aggrandizement. These ranged in size and scope from the Korean war to guerrilla conflicts such as waged in Greece.

It is imperative that we be prepared for every eventuality—for a 'big' war or a local war—for an atomic war, or one in which atomic weapons are not used—for a war fought by Soviet troops, or a war fought by puppet 'volunteers' in an effort to nibble away the fringes of the free world. It does us little good in the long run to be able to deter an enemy from one kind of aggressive action, if at the same time we leave him free to pursue with comparative impunity another course by which he might achieve the same result.

Secretary of the Army Wilber M. Brucker

The Marines' New Look

Colonel Theodore C. Mataxis, *Infantry*
Headquarters, 8th United States Infantry Division

This article is adapted from a chapter prepared by the author for a forthcoming book titled, NUCLEAR TACTICS, Weapons, and Firepower in the Pentomic Division, Battle Group, and Company, *coauthored by Colonel Mataxis and Lieutenant Colonel Seymour L. Goldberg. This book was published in December 1958 by the Military Service Publishing Company, Harrisburg, Pennsylvania.—Editor.*

RECENT events in Lebanon have emphasized the need for "mobile forces" available to move at a few hours' notice to the support of our friends and allies around the periphery of the Communist empire. The joint commitment of Marine and Army forces in Lebanon has highlighted the need for all Army officers to be familiar with the latest Marine organization and tactics.

To meet the requirement for mobile forces the Army developed its Strategic Force concept which calls for a strong mobile force ready for immediate deployment to any danger spot in the world. Fast movement of a significant size force by air supplemented by sealift is essential to accomplish this mission effectively. A high degree of teamwork between the Air Force Troop Carrier Command and the Army's Strategic Corps airborne divisions gives the Army a capability of putting a "fire brigade" on the spot where aggression has broken out before it can spread out of control. A battle group transported by air and parachuted into an area within a few hours of the occurrence of the aggression may well be worth a corps arriving a few days later.

Faced with the requirements for such a mobile flexible force, the Army reorganized its infantry and airborne divisions. It changed from the traditional triangular three-regiment divisions into new pentomic divisions of five battle groups each. These new divisions are small, more mobile, and with their organic nuclear fire support means, much more powerful. They have been tailored to move rapidly and to be prepared to fight with or without nuclear weapons. They are ideally suited for use in the Army's answer to the threat of international Communist expansion by limited wars—the Strategic Army Corps (STRAC).

One Weapon Inadequate

The Navy and Marine Corps have, along with the Army, long recognized the fallacy of relying on one weapon. In order to prepare for limited wars and actions of the nature which occurred in Lebanon, the Navy developed the fast landing force concept. It features the use of aircraft carriers and cruisers as the backbone of an amphibious landing force. This new amphibious force visualized quite a change from the World War II amphibious at-

With the reorganization of the new Marine division and the disclosure of the Navy's "fast landing force" concept another element of power has been added to the mobile deterrent force of the United States

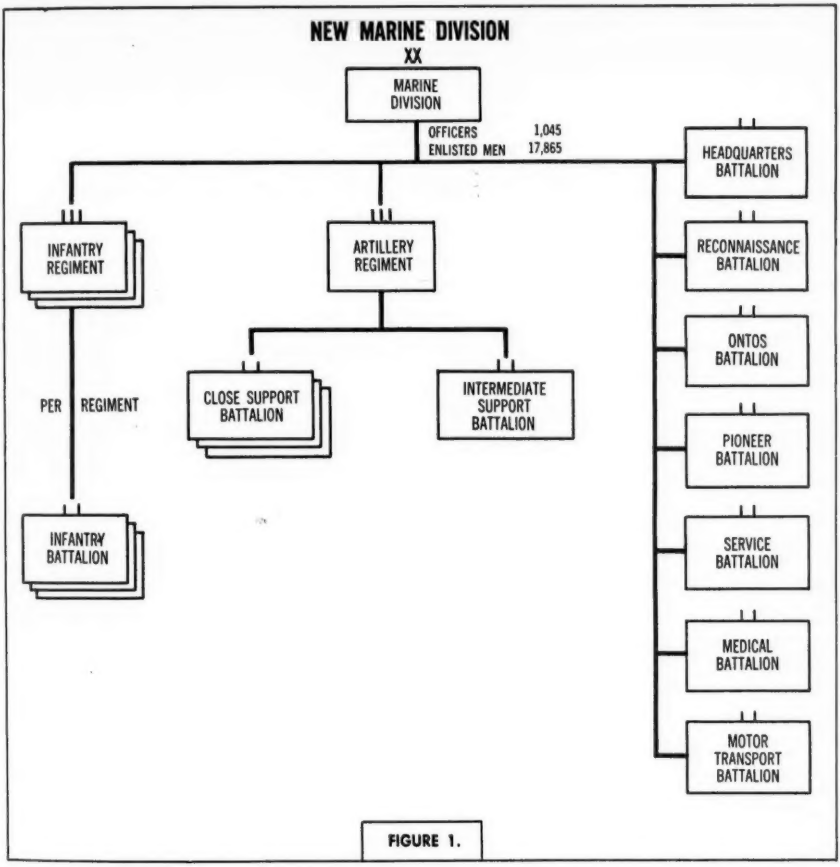

FIGURE 1.

tack which sent waves of troops ashore in landing craft to seize a shallow beachhead. New tactics call for the use of helicopters carrying "slimmed down" Marine battalions to seize widely separated key terrain far to the rear of the normal landing beaches. Only after those points were secured and the enemy defeated in this area would the beaches be used to move ashore heavier equipment and weapons. This new concept called for a complete reorganization of the Korean war type Marine division. A comparison of the new Marine division with the Army's pentomic infantry division reveals several interesting variations in organizational concept for the future battlefield requirements.

As in the Army's reorganization of the infantry division, the Marines have realized that in order to gain strategic mobility much of the division's organic heavy equipment would have to be eliminated. As a result many heavy items were deleted from the equipment list. In order to

make their assault elements completely helicopter mobile, as well as the entire division air transportable, they also have had to cut weight even more critically than the Army.

Marines Retain Regiment

It is extremely interesting to note that the new Marine division (Figure 1) has retained its traditional regimental/battalion structure. This differs considerably from the Army's pentagonal concept. Faced with the problem of warfare on the nuclear battlefield, the Army developed the Pentanna concept which visualized the combat zone as being greatly extended in depth with extremely fluid combat actions. As stated by the US Army Progress Report (1956):

Units must disperse to avoid detection and destruction by atomic weapons and converge to fight. Its decisive margin of strength lies in mobility and fast reaction time so that it will be able to live on the atomic battlefield and exploit shock and devastation of atomic weapons. Tactical units must be small, independent battle groups capable of operating for extended periods at long distances from higher echelons.

Colonel Theodore C. Mataxis was graduated from the University of Washington in 1940. During World War II he served with the 2d Battalion, 276th Infantry Regiment, in Europe. He attended the 12th General Staff and 13th New Division Courses at the U. S. Army Command and General Staff College during World War II; was graduated from the Regular Course of the Indian Defense Services Staff College in 1950; and completed the 1957-58 course at the U. S. Army War College. His assignments include duty with the United Nations Cease-Fire Team for India-Pakistan in Kashmir; commander of the 17th Infantry Regiment, 7th Division, in Korea; on the faculty of the U. S. Army Infantry School; and Deputy Chief, Evaluator Group, Headquarters, Exercise King Cole. *He now is Deputy Brigade Commander, Headquarters, 8th United States Infantry Division.*

Based on this study, the three infantry regiments and nine infantry battalions in an infantry division were abolished and replaced by five infantry battle groups, each consisting of four rifle companies and a heavy mortar battery.

The reasons stated by the Marines for retaining the triangular regimental/battalion structure will sound familiar to those in the Army who opposed the elimination of the regiment in the adoption of the Pentanna concept. According to an article, "The Division," in the April 1957 issue of the *Marine Corps Gazette*:

The triangular structure was retained at regimental level since, in the dispersed formations which the division may adopt in nuclear warfare, it is considered that the division commander requires an intermediate headquarters *to properly direct and control his nine battalions. The increased emphasis on mobility and night operations required in fast moving, highly fluid combat situations, highlights this need for well-trained and efficiently directed battalions.*

The article goes on to state further:

The Fleet Marine Force Board considered that, since the basic prerequisite for success in combat is effective training, the responsibility for training must be firmly, permanently, and clearly fixed. Although it is conceded that battalions could be grouped under combat command type headquarters for tactical operations, it is believed that battalions which have trained together under a regimental commander will operate as a more efficient team on the battlefield.

Infantry Units Reorganized

Under this new concept the Marine infantry regiment has been reorganized so that it and its subordinate elements are completely helicopter transportable. The 4.2 mortars and the tanks have been eliminated completely from the infantry regiment. During operations, supporting ele-

ments required for antitank protection, fire support, and logistical support will be attached as necessary.

The Marine infantry battalion also has been reorganized. A fourth rifle company has been added to provide staying power so necessary in modern combat. This extra rifle company also makes the battalion a more flexible organization allowing the creation of temporary task groups as needed. The heavy weapons company of the old battalion has been eliminated and the 106-mm recoilless rifles and 81-mm mortars included in the battalion headquarters and service company. This also differs from the Army reorganization where upon elimination of the Army infantry heavy weapons company, the 81-mm mortar and 106-mm rifle were included as organic rifle company weapons.

Under the new reorganization, the Marine Corps rifle company consists of three rifle platoons and a weapons platoon as compared to the pentomic company's four rifle platoons and a weapons platoon. As in the Army, the 60-mm mortar has been eliminated from the rifle company. The Marine Corps rifle company weapons platoon is equipped with machineguns and 3.5-inch rockets. However, the new rifle company is slightly smaller than the previous company due to elimination of the 60-mm mortars and reduction in the strength of the machinegun squad and company headquarters.

Artillery

The division's artillery regiment also has taken on a "new look." The new artillery regiment has a total of 96 tubes as opposed to the 72 tubes in the old artillery regiment. In the place of the 105-mm howitzer the three close support battalions will be equipped with 24 new type (105-mm or 120-mm) heavy mortars. This increase in tubes in the close support battalion helps balance the loss of the 4.2 mortar deleted from the infantry regiment in the reorganization. The eighteen 155-mm howitzers in the intermediate support battalion have been replaced by eight gun batteries equipped with the 105-mm howitzers.

The need for complete air transportability within the division has led to the replacement of 2½-ton trucks by jeeps in the close support battalion wherever possible. In the intermediate support battalion five-ton trucks are being replaced by 2½-ton trucks. As in the reorganization of the division artillery for the Army's pentomic division, the Marines calculated that the use of nuclear munitions would reduce the requirement for "conventional" fire support.

This contrasts with the approach taken by the Army during its reorganization. In the pentomic division the 4.2 mortar was retained in the battle group and close support is to be furnished to the battle groups by a 105-mm battalion consisting of five batteries. A composite battalion in division artillery consisting of 155-mm howitzers, 8-inch howitzers, and an *Honest John* rocket battery provides the infantry division its heavier fires and its own organic nuclear support means.

The Marines reduced the range and "weight" of their fires in the reorganization of their divisional artillery regiment. This was done deliberately, however, in order to provide artillery which could land and fight in support of the Marine regiments' deeper and more widely dispersed assaults under their modern amphibious techniques.

When considering the Marine division's fire support, it must be realized that in addition to the fire support provided by the artillery regiment, the Marines can call on close air strikes and also naval gunfire which appreciably increases the amount of heavy fire support available to the assaulting battalions.

This new look has provided more changes than just the armament of the artillery regiment's battalions. The close support artillery batteries are each provided with their own fire direction center

(FDC) which will be located at the infantry battalion command post (CP).

The new close support battalion headquarters is tactical and administrative. In turn it establishes its FDC within the infantry CP. It also has been assigned the countermortar role and tactical disposition of fires, a function formerly performed at artillery regimental level. This new relationship between artillery and infantry provides a more rapid degree of fire support than was possible under the old system.

The artillery regiment has assumed more responsibilities. It now is responsible for counterbattery, a role formerly performed by force artillery. In addition, it provides an alternate division CP in case of loss of the entire division command post due to a nuclear strike. Also any force artillery units which are not further assigned to battalions will be controlled by the regimental headquarters.

Army Approach

This compares to the new tactical role of artillery in the Army's pentomic divisions. With only two battalions in place of the former four field artillery battalions, a new concept of employment of artillery has been developed. The 105-mm battalion of five batteries provides close artillery support to the five combat groups by either reinforcing the fire of the battle group mortar batteries or providing general support fires. In the composite battalion the four batteries fall into two categories—the heavier general support fires of the two 155-mm howitzer batteries and 8-inch howitzer battery and the nuclear capability of the *Honest John* battery.

The contemplated widely dispersed deployment of the pentomic division's combat groups precludes either of the artillery battalions controlling all of its batteries. As a result, in order to provide necessary support and to exercise control, each battalion may have batteries of the other battalion attached. It is even visualized that the deployment of the battle groups will be so dispersed that "battery groups" or independent batteries will furnish the artillery fire support.

Additional Fire Support

As previously mentioned, when considering the firepower available to the Maine division, the Marines had a slightly different problem. They could also include the firepower of naval gunfire and their "organic" close support, Marine air. The Army, on the other hand, in developing the pentomic division, had, in most instances, to depend largely on its own resources—the organic firepower of the division supplemented by corps artillery and air strikes when available.

In addition to naval gunfire and close support aviation from the Marine aircraft wing, the Marines have force artillery units which correspond in role to the Army's corps artillery. The new amphibious tactics of the Marines are tailored for tactical nuclear warfare. This has completely changed the concept of operation and organization of their force artillery (Figure 2). Artillery battalions as such have been dropped from the force artillery. All force artillery units now are organized as separate independent batteries. The following types of batteries included in force artillery may be selected as needed to make up force artillery to support the landing: 155-mm self-propelled gun, 8-inch self-propelled howitzer, truck mounted *Honest John* rocket and helicopter-transportable 105-mm howitzer and *Little John* rockets. The 155-mm howitzer and 4.5-inch rockets have been dropped from the new force artillery organization.

The new amphibious tactics call for force artillery to be organized as needed to support the assault. For example, in case of a one division landing, these independent batteries may be grouped under a field artillery group headquarters as the highest echelon of force artillery or in the case of a larger landing, a landing force

FORCE ARTILLERY UNITS

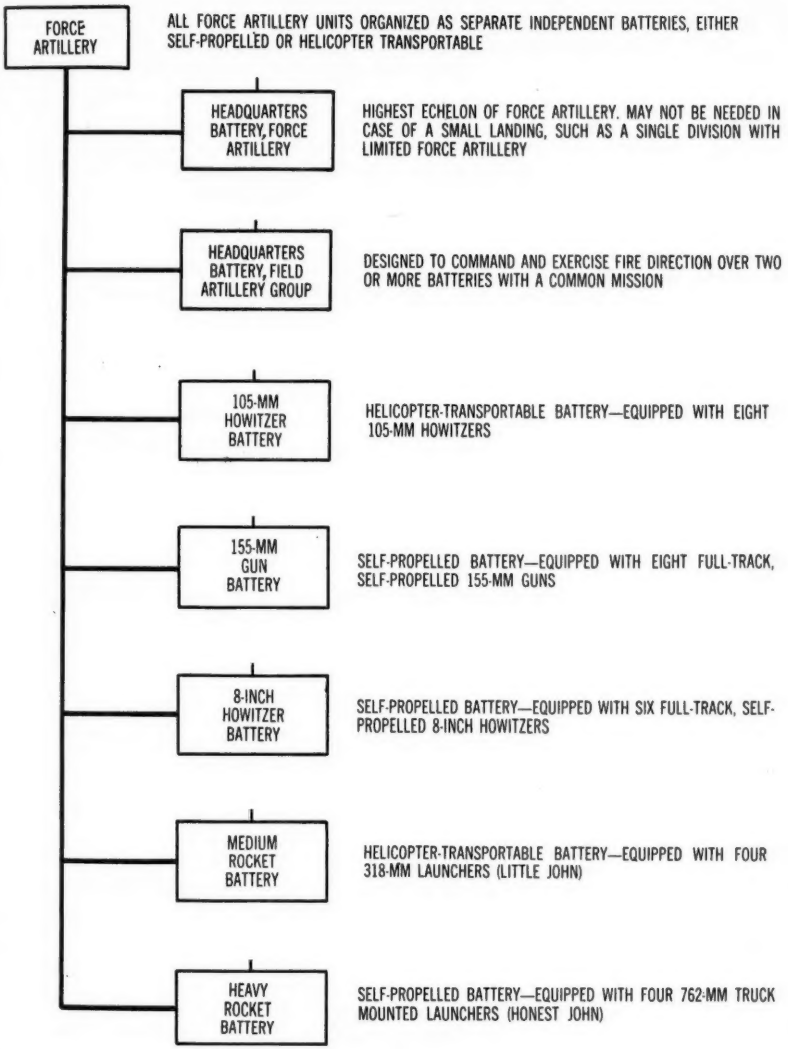

FIGURE 2.

artillery headquarters would be utilized to command the force artillery. Force artillery as corps artillery in the Army provides the Marine divisional commander with a powerfully and varied source of additional fire support ranging from the 105-mm howitzer through the nuclear capability of the *Honest John* rocket.

Support Units

In line with its effort to keep the division air transportable, the tank battalion was eliminated from the division structure and moved to force troops. When needed, tanks and necessary force engineer units would be available for attachment to the division. With the tank battalion no longer in the division, a replacement weapon had to be selected which would give antitank and close support fires to the infantry.

The *Ontos*, a mechanized carrier mounting six 106-mm recoilless rifles was selected because of its firepower, mobility, and lower weight which allowed it to be air transportable. The 45 *Ontos* vehicles in the division are organized into an *Ontos* battalion consisting of a headquarters and service company and three *Ontos* companies. The *Ontos* battalion is assigned a principal mission of antitank protection. Its secondary mission is direct fire support for infantry and reconnaissance units.

Another major change was the replacement of the reconnaissance company by a reconnaissance battalion. This parallels a similar change in the Army's infantry division. This change will greatly increase the division's target acquisition and reconnaissance capabilities so necessary on the nuclear battlefield. The reconnaissance battalion is capable of being entirely helicopter transportable. A helicopter reconnaissance squadron has been added to the light helicopter group of the Marine aircraft wing, specifically to furnish helicopter mobility to the reconnaissance squadron.

The Marines in reorganizing their service elements considered, as did the Army, the effect of nuclear weapons against the World War II and Korean type supply system. It was clear that the service elements would have to be reorganized drastically to furnish the type support needed to "back up" the wide sweeping changes in organization and tactics of the combat elements if the division were to live and fight effectively on the nuclear battlefield. As in all reorganizations a balance had to be drawn between what is needed and what is available to equip the units. This reorganization has attempted as has the Army to cut down overhead wherever possible and to increase the ratio of combat to service personnel.

First, consider the engineer battalion. With the removal of the tanks from the division and its general "slimming down" in order to be air transportable, the need for heavy bridging was removed. With the removal of heavy bridging equipment from the battalion, the substitution of pioneer battalion was felt to be a more appropriate title. The pioneer battalion is organized into a headquarters and service company, a pioneer support company, and three pioneer companies. It will furnish both tactical and logistical support. With the attachment of tanks to the division, additional engineer support as necessary will be attached from the force engineer battalion.

In order to provide the type logistical support necessary on the modern battlefield, it also was necessary to make major changes in the old division service regiment. It was redesignated the service battalion and has been thoroughly reorganized to provide the mobility and flexibility needed. The service battalion is organized into a headquarters and service company, three light support companies, a medium support company, and two landing support companies. The current division's shore party function also has been incorporated in the new service battalion with a substantial savings in personnel and equipment.

The changes in the medical battalion are relatively minor. Two hospital companies have been deleted and have been replaced by the addition of one collecting and clearing company. This leaves the battalion organized as follows: a headquarters and service company and four collecting and clearing companies.

In considering the organization of the transport battalion, the Marines took into consideration the increasing availability of helicopter transportation. It was felt that the increased helicopter transportation would allow a cut of a transportation truck company. The transportation battalion now consists of a headquarters and service company and three truck companies which can provide the lift for two infantry battalions.

Comparison

In its changes in combat support and service support elements the Marine division cannot be compared directly to the Army's pentomic infantry division. The requirement for air transportability being paramount, plus the availability of helicopter transport, makes it in this instance much closer to the Army's airborne division whose organization was also circumscribed by the need for air transportability of its equipment. It is at this point that the mission for which the various divisions were designed becomes overriding and the planners and organizers must study by means of war games and finally test by field maneuvers the best organization available to carry out the mission assigned.

In both Marine and Army reorganizations the threat of the use of nuclear weapons had to be considered. Even if they were not used in a particular "brush fire" war, the very existence of tactical nuclear weapons would force a battlefield posture which would preclude complete destruction in case of sudden surprise use by one of the opponents.

Conversely, the possibility of nonuse of nuclear weapons, such as in Korea, Indochina, or the landings in Lebanon also must be considered. As a result forces designed must not depend completely upon nuclear weapons but must have a dual capability so that they also can fight effectively without using these weapons.

The necessity for combat ready forces "in being" capable of rapid deployment precludes the constant reorganization of units as new and improved weapons are produced. In order to keep the constant reorganization of units to a minimum, a close look must be taken at the weapons on the drawing boards, and the capability of absorbing these progressively new weapons which can be expected in the next few years must be built into the new organizations.

Conclusion

In today's bipolar world, when facing an aggressive and hostile Communist state bent on imposing its form of government on the entire world and whose head of state, Nikita Khrushchev, has publicly avowed "We will bury you," our national objectives can be furthered only when backed up with a powerful mobile combat ready force.

It is to meet this need for powerful mobile forces that STRAC originally was organized. The reorganization of the new Marine division and the disclosure of the Navy's "fast landing force" concept adds another element of power to the cards held by our Nation. International communism's attempts at aggression today will have to face the risk of a swift airborne assault by STRAC's airborne divisions combined with the Navy's "fast landing force" amphibious assault by the Marines.

OUR FIRST AMPHIBIOUS ASSAULT

Dr. Cornelius C. Smith, Jr.
Historian, Fifteenth Air Force, Strategic Air Command

ON 9 March 1847, between six and ten o'clock in the evening, elements of the United States Navy under the command of Commodore David Conner placed approximately 12,000 American troops ashore at Veracruz, Mexico. The operation marked the first time in American history that American troops had invaded foreign soil by sea for the purpose of taking and holding territory.

True, John Paul Jones had raided one or two Scottish seacoast towns in the Revolutionary period, and Eaton had later captured Derne on the Tripolitan coast after a forced march over the Libyan Desert. Also, American troops had made several forays into Canada during the second war with England. However, all these affairs were minor, designed as rescue missions or harassments, and can in no sense be classed as first-rate amphibious operations.

The Veracruz landing, on the other hand, was a real assault, designed to take and to hold, and it was conducted along the classic lines of amphibious warfare. That it was unopposed does not detract from the luster of its implementation. It was well-conceived, well-planned, and well-executed.

What might have happened had Santa Anna met Scott's forces on the beach is conjecturable. Surely the casualties would have been a demoralizing factor, but the veterans of Palo Alto and Resaca de la Palma would likely have gained a beachhead regardless. In any case, history has taken any such surmise away from us. The die was cast the moment Santa Anna turned northward from San Luis Potosí to meet Taylor at Buena Vista.

Significance of Landing

The business of putting men and supplies ashore in landing craft was easily one of the major accomplishments of World War II, and was tremendously vital to the Allied cause. By the same token, Scott's landing was of great significance to the Mexican venture as it enabled the American forces to execute an end-around sweep for the capital while the Mexican Army was engaged with the main American force in the north.

The siege of Veracruz was divided into three parts: the descent, the bombardment, and the surrender. The descent, in turn, was made up of three separate operations: the embarkation, the transshipment to naval vessels, and debarkation into specially built landing craft designed for the maneuver. It was a highly complicated movement involving continual action from start to finish.

Credit for the condition existing at the time of the assault must be given to the Home Squadron under Commodore Conner. It is of significance to note that whatever commerce or naval power Mexico may have had in the Gulf was annihilated by Conner's forces prior to Veracruz. Absolute mastery of the sea was obtained, and all, or nearly all, of the Mexican vessels

Veracruz had none of the tragedy of later amphibious assaults, but carried out in principle techniques employed in this type operation. The assault was well-conceived, carefully planned, and well-executed

venturing forth were captured, sunk, or burned. The coast was blockaded effectively, and small landing parties were able to penetrate miles inland on reconnaissance missions. All principal ports of entry were either blockaded or occupied by American naval units, and even Yucatan was cut off from the rest of Mexico by a string of gunboats extending up-river from Laguna de Términos.

Start of the War

The war had come about as a result of the annexation of Texas and the subsequent dispute with Mexico over the international boundary line. When the Annexation Bill was passed in March 1845, Mexico recalled her minister from Washington and broke off relations with the United States. Fearing reprisals over the annexation, the Government sent Colonel Zachary Taylor of the 6th US Infantry to Corpus Christi with eight companies of the 3d Infantry.

Taylor arrived there in the fall of the year, and by late October his small force had been augmented by a regiment of dragoons, four batteries of artillery, and four more infantry regiments. These troops totaled about 3,500 officers and men, and comprised the entire United States Army except for one other dragoons regiment and three additional infantry regiments. Mexican forces were estimated to be about 30,000.

The first engagements of the war occurred at Matamoros, Palo Alto, Resaca de la Palma, and Monterey, each resulting in an American victory. A continued march overland to the capital city would have required movement over some of the roughest terrain on the entire continent, and would have been contested every step of the way. Consequently, the Administration in Washington devised the plan of occupying Tamaulipas as a means of forcing Mexico into submission. Accordingly, Commodore Perry was sent to occupy Tampico, and Taylor, now a general, took up a new position in the state capital at Ciudad Victoria. The occupation of Tampico failed to cause the defection of Mexican arms, but the port was of some value in the staging of the Veracruz operation in the early months of 1847.

Troops Transferred to Scott

A few days after Taylor, Twiggs, and Patterson had effected consolidation at Victoria, Taylor received orders detaching all of his regulars and volunteers, with the exception of several artillery batteries, dragoons, and enough infantry to protect his line of communications. Most of his troops were taken over by General Winfield Scott to be used in the assault on Veracruz.

Santa Anna was able somehow to intercept this information, and actually had the choice of trying to stop Taylor's advance or meeting Scott on the beaches at Veracruz. It is one of the bitter disappointments in the Mexican memory that he chose the former, not only suffering defeat at Buena Vista, but permitting Scott's formidable army to land unopposed behind him. Santa Anna's troops could fall back upon a series of strong points well-known to them between Monterey and the

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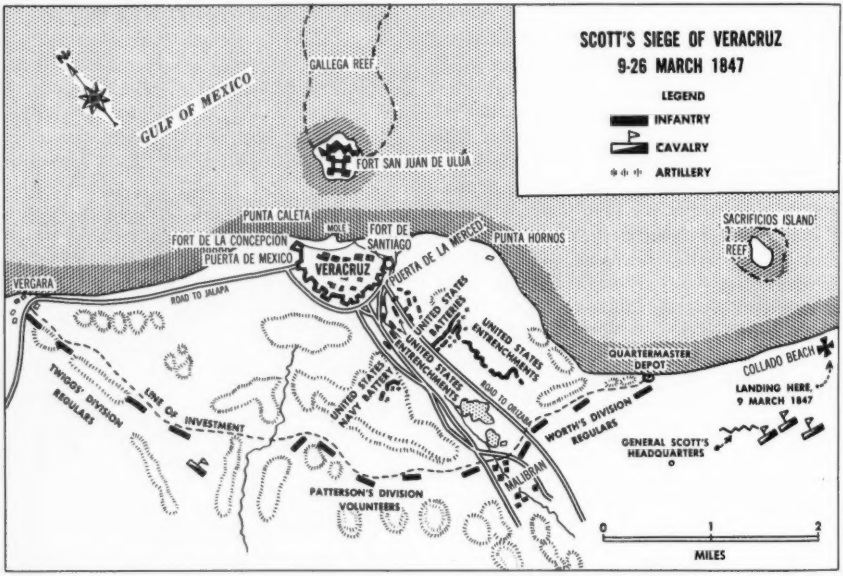
capital if the American effort should be launched from Monterey.

Under the circumstances, a two-prong attack seemed indicated. The terrain from Veracruz to Mexico City was easier for an army to negotiate than that between Monterey and the capital. South of the Rio Grande the inland reaches were marshy and dense with tangled vegetation. A column of troops, especially one handling heavy equipment, might flounder in the black waters of these swamps, or be cut to shreds by saw grass and palmetto leaves. The "Tierra Caliente" had the advantage of plenty of water as numerous fresh water streams emptied into the Gulf from the Sierra de Tamaulipas. Also, the land offered forage for horses. In no other respect was it a fit place for the passage of troops.

In addition, from Veracruz westward two roads led to the Plateau of Anahuac, the great interior tableland of Mexico. These roads came together at El Pinal, a few miles east of Puebla, the northernmost leading into the city of Mexico by way of Jalapa, Perote, and Puebla. This road was almost identical to the route taken by Cortes in 1519. As it was the main post road in 1847 between Veracruz and the capital, it was the one selected by Scott for his march overland. The other road led through Orizaba, and was used later by the French in their invasion of Mexico in 1863.



Scott's Estimate

In his estimate of troops for the march on Mexico City, Scott felt that he would need at least 15,000 men, one-third of them regulars. Even though he had gained some success in 1812 with green troops, his opinion of militiamen and volunteers was not too high. He bolstered these forces with regulars wherever he could. In forming his landing force Scott built the core around the 4,000 regulars he had taken from Taylor, along with two batteries of

artillery and about 1,000 cavalrymen. Augmenting these men were the volunteers taken from Taylor at Victoria, numbering approximately 4,000. The remaining 6,000 men were to be volunteers recruited for the expedition in the United States. Because of lack of enthusiasm over the project, Congress did not authorize the raising of this army until the end of February 1847.

Scott was dismayed, as he believed he needed to be in place before Veracruz early in February, due to the danger from malaria as the warmer days came on. Also, although he had submitted his requisitions for transports and lighters to the Navy, he could not line up space for all the gear he wanted to carry ashore—wagons, artillery, horses, provisions, and supplies. As commanders before and after him he was plagued with excuses and delays, and by 1 March had only 13,000 men assembled. Nonetheless, he must move if he were to be put ashore before the following winter.

Organization of Forces

In gathering his troops for the assault, Scott chose the little island of Lobos as his staging area. Lobos is a pinpoint on the map, lying in the Gulf Coast some 90 miles south of Tampico. Troops were not put ashore there, and the transports merely anchored in the lee of the island while Scott made his final plans. Here he collected all of his units and formed them into three divisions of infantry. The First Division was placed under the command of Brevet Brigadier General Worth, and consisted of the Second and Third Regiments of Artillery, and the Fourth, Fifth, Sixth, and Eighth Regiments of Infantry, totaling 3,075 men. The Second Division, slightly smaller with 2,917 men, was made up of the First, Second, Third, and Seventh Regiments of Infantry, the First and Fourth Artillery Regiments, and one regiment of mounted riflemen. It was commanded by Brigadier General Twiggs.

All of the volunteer troops with the exception of cavalry were to be assigned to Major General Patterson and organized into one division of three brigades. At the time of departure from the staging area, however, only about 3,500 of these men had arrived, and these were formed into one brigade and placed under the command of Brigadier General Pillow.

The First and Second Dragoons were commanded by Colonel Harvey, and together with the Volunteer Cavalry Regiment from Tennessee were held under the immediate orders of the commander in chief. A company of "Rocketeers and Mountain Howitzers" likewise were held by Scott for immediate assignment to any portion of the line. These troops were under the immediate command of Lieutenant Talcott.

Field batteries were placed under the command of Brevet Lieutenant Colonel Duncan, Captain Taylor, and First Lieutenant Steptoe, and were ordered to report to Generals Worth, Twiggs, and Pillow respectively.

Naval Cooperation

In advising his troops of the forthcoming attack, Scott displayed simultaneously his role as inspirational leader and disciplinarian.

General Order Number 34,
Headquarters of the Army Ship,
"Massachusetts," Off Lobos Island,
Feb. 26, 1847.

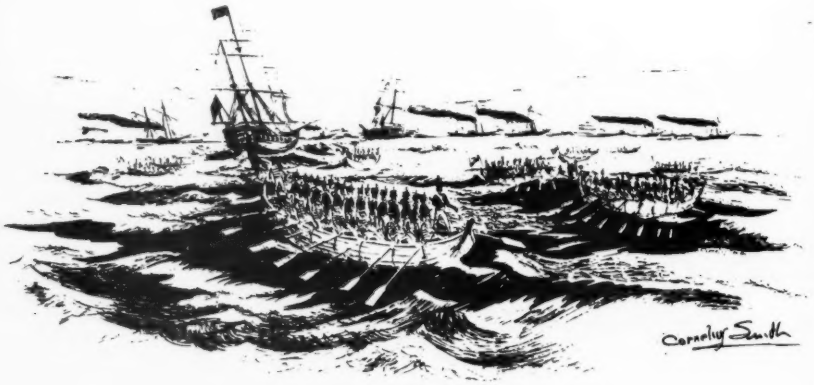
The Army afloat is destined within a very few days to make a descent upon the enemy's coast, under circumstances which will demand the utmost vigilance, coolness, and exactness of conduct on the part of every officer and man. The General-in-Chief, ever ready to applaud the orderly, gallant, and efficient under his command, will be found equally prompt in visiting upon the negligent, the disobedient, and the backward his censure and the whole power of the law.

The same order, a lengthy one, carried a dignified bid for cooperation by the Navy, and probably was one of the reasons for the efficient conduct of the operation.

Each surf boat is not only sufficient to receive a platoon (half company), with its officers, but also a competent number of sailor oarsmen. The General-in-Chief confidently relies upon a hearty cooperation of the Navy for the greater number of sailors needed for that purpose, under the command of junior and petty officers to direct the steerage, anchorage, and return of the boats. He appeals to the patriotism of the mates, masters, and sailors of the several transports to furnish a large additional number of cockswains and oarsmen. . . . As fast as the troops land, the emptied boats will rapidly pull away for the transports with boat signals flying, and this will be repeated until the whole army shall have been put ashore.

Naval cooperation must have been excellent, for inspection of official reports of the landing indicates that it was accomplished practically without incident.

When the troops had been assigned, the Army sailed from the Lobos anchorage to Anton Lizardo, a little seaport about 12 miles south of Veracruz. The frigate *Potomac* and the sloops *John Adams* and *Albany* were stationed near Isla Verde, a small island five miles seaward from Veracruz. Commodore Conner had placed these ships there with orders for naval officers to transfer from them to the army



troopships as they drew abreast, and to guide them to safety in the Anton Lizardo anchorage. Thus the naval squadron and the army troopships became concentrated between Salmadina Island, and the little town of Anton Lizardo.

Landing Beach Selected

The invasion fleet numbered just under 100 sail, all set to take aboard approximately 12,000 men along with their horses, artillery, baggage, and supplies. General Scott conferred with Commodore Conner aboard the steamer *Petrita*, and the two men agreed upon the best spot to disem-

bark the troops. The choice of beaches narrowed down to two: the first being Point Anton Lizardo itself, the second Collado Beach just opposite Sacrificios Island. Collado was selected, since the march inland to Veracruz was less than two miles, whereas debarkation at the port would have resulted in opposition and a 15-mile march to the outskirts of Veracruz.

There was one disadvantage in using Collado, however. Anchorage space there was limited, and the landing was to take place in the "Norther" season. Had one of these gales occurred, the entire expedition easily could have ended in disaster. It was decided, therefore, to transfer all troops from the transports to the men-of-war and steamers, and to take the landing craft in tow.

It is no derogation of Scott's qualities to report that he had at first envisioned the disembarkation as a simple affair. He saw it as an uncomplicated maneuver to be made from the boats chartered for the occasion. After talking with Conner, however, the general saw the wisdom of first boarding navy vessels, and then transferring into specially constructed lighters for a run on the beach under the cover of naval artillery.

Landing Boats

A word on these specially built lighters is applicable here. In order to land such a sizable body of men, the surfboats had to be contracted for and built in ports of the United States by the Quartermaster Department of the Army. The specifications were complete to the finest detail to include the type of timber to be used in the construction of various parts of the boat and the method of calking. They were to stow in nests of three and to be built of the best seasoned materials and iron fastened.

The boats were of three different sizes, the largest being 40 feet long and weighing 6,280 pounds (6,522 pounds with oars). The intermediate boat was 37 feet nine inches long, with a hull weight of 5,127 pounds, and the short boat was 35 feet nine inches in length and weighed 3,942 pounds.

The contract price paid for each boat was 759 dollars, a figure far exceeding the craft's intrinsic value, but permitted in view of the fact that only one month's time was given for the completion of all boats. A deduction of 10 dollars on the contract was agreed upon for each day taken by the builders in excess of the 30-day limit. Likewise, a bonus of the same amount was agreed upon for each day less than the stipulated 30.

It is not known whether the contract was completed before or after the 30-day period, but it is known that 141 boats (47 nests) were finished according to specifications and shipped to the seat of war. Some of these were shipped in vessels belonging to the Quartermaster Department. The decks of the vessels had to be cut in order to stow them in the holds. Some were sent on the decks of ships especially chartered for the occasion. Of the 141 boats dispatched, only 65 reached Anton Lizardo in time for the operation.

The Preparation

Prior to leaving the second anchorage, a reconnaissance was made of the castle at San Juan de Ulúa, a stronghold guarding the approaches of Veracruz.

On 9 March the army transferred from the chartered vessels to the commodore's ships, and set sail for Sacrificios Island. Each frigate boarded about 2,500 men fully equipped, and the sloops approximately 900 men each. The lead ship was the *Raritan*, acting as the commodore's flagship. Scott and his staff were aboard the steamer *Massachusetts*.

Surfboats, tied to the stern of the larger vessels, were apportioned as follows: The frigate *Raritan* was issued 15, and the frigate *Potomac* 20. The sloops *Albany* and *St. Mary's* were allotted 10 each, as was the steamer *Princeton*. Not all the ships

assigned boats towed them to the rendezvous. For this task the steamers *Spitfire*, *Vixen*, *Eudora*, and *Petrita* were employed. These must have made an odd sight to anyone watching from shore; a long string of jerking, bobbing, empty small craft pulled along in the wake of the larger ships.

The first line was made up of the First Division of Regulars under General Worth, and Captain Swift's Company of Sappers. *Porpoise*, and the steamers *Massachusetts*, *Eudora*, and *Petrita*.

Captain Forrest of the *Raritan* was put in charge of the landing operation. Each vessel's captain was directed to provide a junior or petty officer and seven crewmen to each of its assigned small craft. Each division of 10 boats was commanded by a lieutenant. The officers thus detailed were made to acquaint themselves with the crews of each separate boat assigned

These troops were placed aboard the frigate *Raritan*, and the steamers *Princeton* and *Edith*. Field batteries of Captain Taylor and Lieutenant Talcott were towed to the rendezvous site by the *Massachusetts*. The second echelon was comprised of the First Volunteer Brigade under Pillow, and the South Carolina Regiment of Volunteers in the frigate *Potomac* and the steamers *Alabama* and *Virginia*. The reserve then became the Second Regular Division, and these troops were put on board the sloops *Albany* and *St. Mary's*, the brig to them so that there would be no wholesale grabbing of boats by bewildered personnel in the excitement of embarkation.

Anchors were stowed in the sterns, hawsers coiled clear for running, and the coxswains briefed to drop anchors over the stern and outside the breakers in the event of landing through a heavy surf. In this way the crew could warp the boat seaward with less danger of broaching once the troops had gone over the side. As far as good planning was concerned, the army was ready to go in.

Troops Go Ashore

The ships arrived off Sacrificios at about two o'clock in the afternoon, and from then until sundown troops were engaged in transferring from naval vessels to landing craft. The boats were aligned according to battle order, the first wave consisting of Worth's First Division of Regulars, and the detachment of marines under Captain Edson.

The *Princeton* was ordered to take its position abreast of the landing place, and as close in to the shore as possible. Surfboat coxswains were directed to take on their troops and to rendezvous astern of the *Princeton*, forming a double line so as to land the companies in the prescribed battle order.

As the surfboats took on troops, a flotilla of gunboats under the command of Commander Tatnall took position within grapeshot of the beach and peppered away at likely looking targets. Ships thus engaged included the gunboats *Petrel*, *Bonita*, *Falcon*, *Tampico*, and *Reefer*. All were armed with 32-pound guns, and were light enough in draft, drawing from five to eight feet, to be able to take positions very close to the shore.

Upon signal the boats started in, "line abreast," and the first wave landed without opposition. This was about six o'clock in the evening. The boats then ran out through the surf, and continued to make runs between the ships and the beach until all troops were put ashore.

In some cases the boats became grounded on sandbars and the men were put over the side in chest-deep water to flounder ashore as best they could. These instances were infrequent, however, and aside from a few wettings the men were placed ashore in good order. In essence, the landing was not much different from the landing techniques employed by the Marine Corps prior to World War II. In the 1930's, and until Pearl Harbor, the troops were carried in "motor whaleboats" run up on the beach by coxswains so that the men could go over the side with as little discomfort as possible. The letdown ramps of the amphibious forces in World War II campaigns came as the result of circumstances requiring more efficient landing techniques.

The landing, although uncontested, was colorful nonetheless. Troops charged ashore with colors flying and bands playing, and the enthusiasm engendered by the stirring spectacle was helped along by the loud cheers of the sailors on board the delivery ships. By ten o'clock that night about 12,000 men had been put ashore, all armed, equipped, and provisioned. As no Mexican oppositon had materialized, General Worth had been able to position his troops in the neighboring sandhills by sundown. This move enabled him to cover the remainder of the landing, and would have been an absolute necessity had opposition developed.

Support Buildup

After the first wave had gone in the transports were engaged in landing artillery, horses, supplies, and provisions. The logistics were considerable, since the army was faced with an overland march to the capital and could not expect to be resupplied by sea. As supplies were landed, they were put under the contol of a beachmaster. This officer, as his latter-day counterpart, had general supervision of the traffic and routed off-loaded matériel to its proper places. All officers in charge of surfboats reported to him upon landing, and so received orders for the disposition of subsequent loads. In that way, control over incoming cargo was exercised and an orderly flow of provisions was established.

As it developed, boats which came in with horses continued to load horses, depositing them ashore at the same place. These boats pulled in as close to shore as possible, and the animals were cast over the side to swim in on their own. In that way almost 500 cavalry mounts and artillery draft horses were put ashore in a

single day by one division of boats. Likewise, artillery lighters landed only artillery, and stores lighters only stores. The system of marking dumps with symbols had not been introduced in 1847, and the beach literally swarmed with the activity of shouting and running men and prancing horses.

The first method of taking on artillery pieces was somewhat hazardous, if colorful. Two surfboats were lashed side by side and planks placed across the gunwales. The field pieces then were lowered onto this crude platform, ready mounted, and with limbers and ammunition boxes placed alongside. The idea proved impractical, however, and was abandoned. Thereafter, the guns were lowered directly into the boats with slings—caissons, carriages, and all—and were kept from fouling the bottoms only by a few random pieces of stray dunnage and planking.

As the boats reached the shore, two gangway planks were laid from the bow of each craft to the beach, just wide enough apart to receive the wheels of the guns. As a protection against having the guns go over the side, each plank was equipped with battens nailed securely onto the inboard side. So successful was this method that not one gun was dropped.

Great care had to be exercised in handling the siege train, as the boat bottoms were made of white pine, and so could be made to bilge easier than the portions fashioned of oak. After the siege of Veracruz had begun, three 8-inch *Paixhan* guns and three long 32-pounders were taken from the fleet's armament and placed as battery pieces in prepared trenches. These heavy guns could not be lowered into the surfboats, and had to be carried ashore on two boats lashed together with platform planking secured across the gunwales. The guns were well-braced and chocked, and the boats towed gingerly shoreward by other surfboats.

Each gun had a sling attached for ease in handling at the surf's edge, and vents and muzzles were stopped with putty to keep out water. As the boats were grounded, the guns were rolled off on rail planks and pulled ashore with stout ropes. They were then taken up on large timber

wheels and transported with difficulty through the sand to the positions assigned them, about a mile away.

Landing Complete

Thus within a few days after 9 March, General Winfield Scott had, with the able assistance of the Home Squadron, put between 12,000 and 13,000 men ashore on Mexican soil. These men were fully equipped, ready to fight or march, and had been landed in full view of Veracruz and the fortress of San Juan de Ulúa.

Once ashore, Scott established a complete line of investment, extending from shore to shore on either side of the city, and batteries were set up to shell it. The naval siege guns were not used until the afternoon of the 22d, almost two weeks after "D-day." Until they could be used, the siege consisted mainly of desultory sniping from prepared positions close to the walls.

On the 22d, Scott called upon the Mexican commander to surrender the city and the fort at San Juan de Ulúa. The latter declined, and the American heavy batteries opened fire. The bombardment continued until the 26th, at which time the besieged army commander issued a proposal of surrender. Accordingly, Veracruz, the fort, 400 guns, and approximately 5,000 prisoners were turned over to Scott. In the entire operation Scott's losses were 67 killed and wounded. During the siege the only real harassment to the Americans came from the Mexican Cavalry, a force which attacked with surprising frequency and vigor.

Wellington's Reaction

It will not be necessary to trace Scott's campaign through Cerro Gordo and on into the city of Mexico, but the student of military history will find Wellington's reaction to the Veracruz landing interesting. Upon hearing of Scott's landing and the plan to march an army inland to the capital, the Iron Duke said, "Scott is lost. He has been carried away by his success. He can't take the city, and he can't fall back upon his base." That he did take the city without having to fall back on the base does not detract from Wellington's evaluation. It was a bold and dangerous plan, courageously conceived and skillfully executed.

There were those, both in Scott's army and at home, who were provoked with him for not taking Veracruz by storm. He probably could have done so, but his losses would have mounted sharply. Indeed, he had said, "Veracruz must be taken with a loss not to exceed 100 men; for every one over that number I shall regard myself as his murderer." His greatest concern after the landing was to get into the interior highlands before the yellow fever season. It is probable that had he seen the siege going badly, he would have carried the city by storm in order to avoid the pestilence. Also, if he had received his siege guns when he asked for them, he could have started shelling eight to 10 days earlier.

The use of these guns depended, of course, upon naval cooperation and the work in dislodging them from their mounts. Had these guns been available within a day or two after landing, he could have been in the capital by the 23d, and slipped in behind Santa Anna without having to face him at Cerro Gordo. Santa Anna, reeling backward from his defeat at Buena Vista, was able, nonetheless, to position all his forces at Cerro Gordo by 12 April, and was ready to intercept Scott on the 17th.

Scott was aided in the campaign by a group of junior officers many of whom were later to win fame in the War Between the States: Lee, Beauregard, McClellan, Tower, and Mason among them. Even with the competent help of these men, he was handicapped greatly throughout the campaign by a lack of funds and supplies and a continued delay in reinforcements. During his stay in Puebla, for

example, he received neither funds nor supplies, and his troops went unpaid for more than four months. He employed Mexican nationals to make clothing and shoes for his men, and food and forage simply were taken where they could be found.

In fact, the invasion and conquest of Mexico by so small an army was possible only because of the circumstances existing within Mexico at the time. But even the weakness of the Central Government and the internal dissension prevalent everywhere were not sufficient reasons in themselves to assure Scott's success. But for courage and perseverance the campaign could easily have ended as Wellington had prophesied it would, in disaster.

Board of Inquiry

It is ironic that such a brilliant leader should have been treated so indifferently by his government. Scott was relieved of his command after Chapultepec. President Polk sent him before a board of inquiry, not because he had failed in his task, but because one of his jealous subordinates had the President's ear. This man had been reprimanded by Scott and had become insubordinate in the exchange. Scott had no alternative but to prefer charges and the trouble started. Concerning the affair, Daniel Webster was moved to remark in the senate chamber:

> *Here is a man who has performed the most brilliant campaign on recent military record; a man who has warred against the enemy, warred against the climate, warred against a thousand unpropitious circumstances; has carried the flag of his country to the capital of the enemy, honorably, proudly, humanely, to his own permanent honor and the great military credit of his country. And where is he? At Puebla undergoing an inquiry before his inferiors in rank, while the powers he has exercised and executed with so much distinction are transferred to another.*

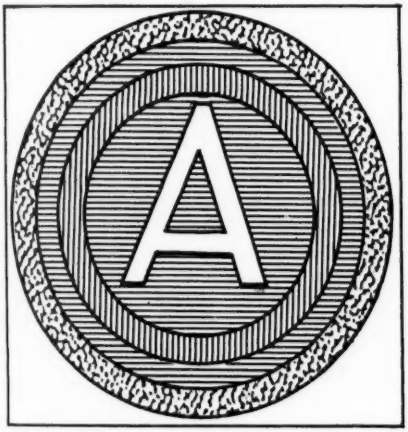
Unfortunately, a set of circumstances arose during the siege culminating in the relief of Commodore Conner also. The commodore's health had begun to fail, and the President had promised Commodore M. C. Perry that he would be assigned as squadron commander by March. Both Conner and Scott had planned to secure Veracruz by late February, in which case the naval credit would have accrued solely to Conner. With Conner's failing health, however, Perry was dispatched to Veracruz and arrived there on 20 March, at the height of the siege. Thus when Veracruz fell, he was in command of the Home Squadron, although it was Conner who had done the greater part of the laborious work in connection with the operation.

Conclusion

This is the story of the development and implementation of our first major amphibious assault. Although it had none of the tragedy of later assaults, such as Normandy Beach, Anzio, Tarawa, and Iwo Jima, it acted out in principle the techniques employed in all of them—transfer from naval vessels into landing craft, rendezvous, attack in waves, and beach discipline. The men of that all but forgotten episode were indeed pioneers in American amphibious warfare. Amphibious operations, of course, have been recorded from the time of Caesar, and before, but the Veracruz episode marks America's entry into that hazardous and skillful occupation.

THIRD UNITED STATES ARMY

Material for this article was furnished by Headquarters Third United States Army, Fort McPherson, Georgia.—Editor.



THE Third United States Army, which covers the southeast part of the United States, has a wide range of activities—everything from the Women's Army Corps Center to the Army Aviation Center to crack Strategic Army Corps (STRAC) divisions.

There are nine Class I installations in Third Army and 22 Class II installations. It also is an area of widespread Army Reserve and National Guard training.

Third Army covers Florida, Georgia, Alabama, Mississippi, North Carolina, South Carolina, Tennessee, and part of Kentucky. Its headquarters is located at Fort McPherson, Georgia, inside the Atlanta city limits.

One of the largest posts is Fort Benning, Georgia, often termed the most complete Army post in the Nation. Fort Benning covers about 182,000 acres and is the home of The U. S. Army Infantry Center, the Infantry Officer Candidate School, the 2d Infantry Division, an Airborne Jump School, a Ranger Training Center, and the U. S. Army Advanced Marksmanship Unit.

STRAC Units

Located at Fort Bragg, North Carolina, are two major STRAC units—the XVIII Airborne Corps and the 82d Airborne Division. Fort Bragg also is the site of the 1st Logistical Command and the U. S. Army Special Warfare Center. All this is located within about 129,000 acres.

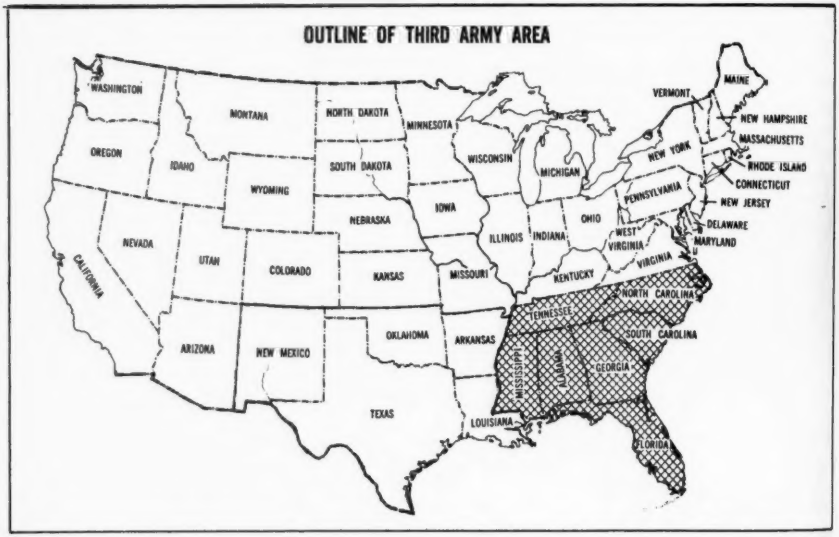
Third Army contains the first division to come under the pentomic concept, the 101st Airborne Division at Fort Campbell, Kentucky. The 101st also is a member of the STRAC force. Fort Campbell spreads over 103,000 acres in Kentucky and Tennessee.

The Army's internal police force is centered in Fort Gordon, Georgia. Fort Gordon contains the Provost Marshal General Training Center, a Military Police School, and the Southeastern Signal School. Part of its 56,000 acres are used by Third Army to conduct large-scale command post ex-

The Third United States Army area covers a vast array of activities including airborne, infantry, WAC, artillery, missile launching, Army aviation, and also training for Army Reserve and National Guard units

ercises using Reserve and National Guard troops.

The largest Third Army installation geographically is Fort Stewart, Georgia, a 203,000-acre post which takes in the Third Army Antiaircraft Artillery Center and the Tank Training Center. Fort Stewart also is used as a training site for Active Army personnel as well as reservists and guardsmen.



Basic Training

Many of the Army's six-month soldiers, training under the Reserve Forces Act of 1955, find themselves at Fort Jackson, South Carolina. This post—of 77,000 acres—is one of the largest centers for combat basic infantry training in the Continental United States.

The Women's Army Corps has its home at Fort McClellan, Alabama—a 40,000-acre post. Also located here are the Chemical Training Command and National Guard training facilities.

The Third Army area contains a large percentage of the Army's flyers and aircraft. Both fixed-wing and helicopter students receive their flight training at the Army's Aviation School located on the 65,000 acres of Fort Rucker, Alabama.

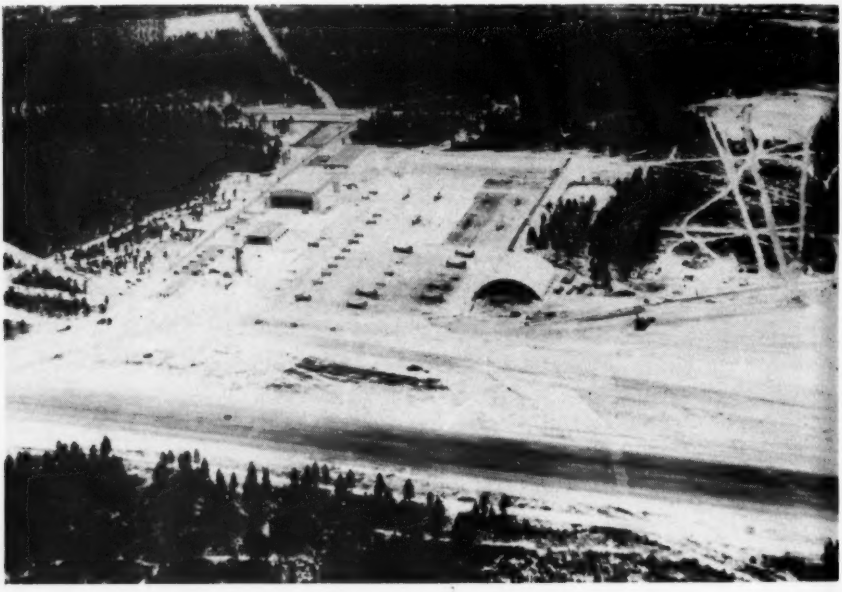
Best known of Third Army's Class II installations perhaps is Redstone Arsenal in Huntsville, Alabama—home of the Army's missile developments. Among other major missiles, Army scientists at Redstone developed the *Jupiter C* used for launching the *Explorer* satellites.

Conclusion

Aside from full-scale installations, Third Army has seven military districts located in key cities of the seven southeastern states. The districts direct Reserve, Reserve Officers' Training Corps, and National Guard activities. The following official United States Army photographs indicate the scope of activities conducted within the Third Army area.

Activities in the Third United States Army area

An aerial view of the new 500-bed US Army Hospital at Fort Bragg, North Carolina



Simmons Army Air Field, Fort Bragg, North Carolina

Paratroopers from Fort Bragg in a practice maneuver

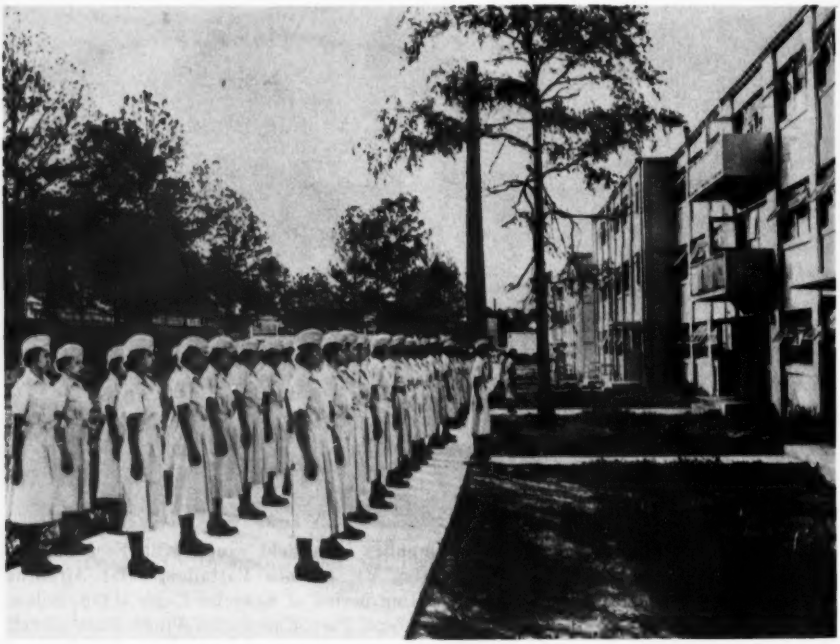
Paratroopers of the 82d Airborne Division land in a swampy area at Fort Bragg

The combined Operations Building, Control Tower, and Hangar at Ozark Army Air Field, Fort Rucker, Alabama

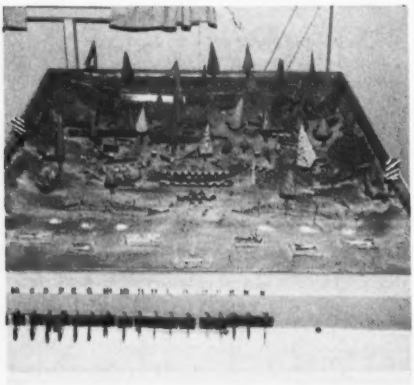
Helicopters armed with machineguns and rockets pass in formation during a rehearsal at Fort Rucker

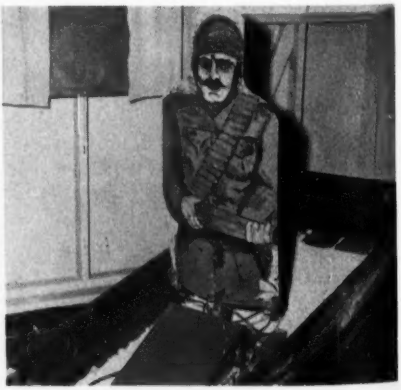
The *H-37 Mohave* helicopter

Above left, an Army *L-20 Beaver* drops supplies in a field exercise at Fort Rucker. Above right, aircraft mechanics of the 801st Maintenance Battalion, 101st Airborne Division, check an *H-34 Choctaw* during refitting period of Exercise *Eagle Wing*. Below, aggressor fighters in Exercise *Eagle Wing* ford Fort Campbell's Piney Fork Creek.



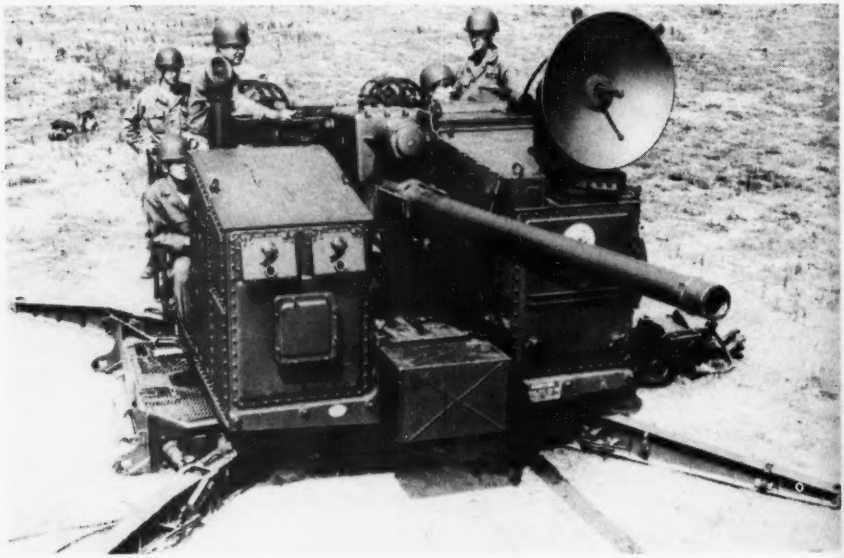
Above, basic trainees stand reveille at the Women's Army Corps Center, Fort McClellan, Alabama. Below left, the sandtable is used to brief visiting officers on *Trainfire II* at Fort Jackson, South Carolina. It shows where the targets are located and the point the squad is defending. Below right, this pop-up target, which is operated electrically to come up at different intervals, is used in *Trainfire II* at Fort Jackson.

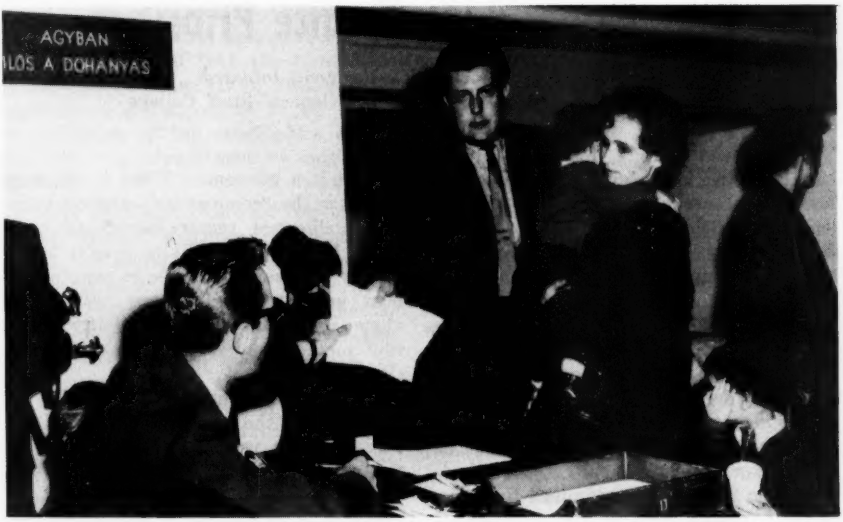




Above, infantrymen accompany an *M48* tank during a tank-infantry exercise at Fort Stewart, Georgia. Below, members of a US Army Reserve battalion plot a course in a tracking mission as part of their training during annual summer encampment at Fort Stewart.

Above, tankers and infantrymen join in an assault on an objective during tactical training in Fort Stewart's large maneuver area. The radar-controlled 75-mm *Skysweeper* antiaircraft gun below is one of the weapons fired by AAA units at Fort Stewart.





Fort Gordon is the home of the 95th Civil Affairs Military Government Group which played a major role in Operation *Mercy* at Camp Kilmer, New Jersey, in 1956-57. Above, Hungarian refugees are welcomed to the US after their country's abortive revolution. Below, a student operates a signal generator during a course at the U. S. Army Signal Training Center, Fort Gordon, Georgia, hub of signal activity in the Third US Army area.

Commander's Intelligence Priorities

Lieutenant Colonel Irving Heymont, *Infantry*
Faculty, U. S. Army Command and General Staff College

THE availability of nuclear weapons for tactical use has created many problems in the field of intelligence. The great improvements in weapons delivery systems have surpassed the ability to locate targets at depths equal to the effective ranges of available missiles. Developments in radar, infrared, and other types of surveillance devices show promise in helping to close this dangerous gap. However, providing new and better surveillance devices is not the complete answer to the problems of intelligence. Our intelligence methods must also be critically examined for effectiveness on the modern battlefield. What sufficed on the battlefields of World War II and Korea may not produce adequate results on the nuclear battlefield.

One of the basic questions facing an intelligence officer is, "What intelligence does the commander need?" Or, "What should I look for?" Our intelligence doctrine, as contained in Field Manual 30-5, *Combat Intelligence*, 1956, states in effect that the essential elements of information (EEI) answer that question. Essential elements of information are defined as the specific information of the enemy, the weather, and the terrain which the commander needs *to accomplish his mission*. The EEI, according to Field Manual 30-5, indicate the "commander's highest priority intelligence requirements and, in effect, prescribe the intelligence missions of the command."

Immediately one is struck by the fact that the term *essential* elements of information is a misnomer. What is obviously meant is the "commander's highest priority intelligence requirements"—to quote Field Manual 30-5. While precise terminology is always desirable to ensure common understanding, proper terminology alone is not the test of the validity of current methods and procedures on the nuclear battlefield.

Essential elements of information, on approval by the commander, become the basis for the intelligence officer's collection plan. From the EEI the intelligence officer develops indications which help provide the answers to the questions posed. The indications are refined further into specific requests and orders that are transmitted to the appropriate collection agencies. The EEI also are announced to the subordinate elements of the command to guide them in the development of their collection plans and to inform them of the intelligence tasks of the entire command.

In practice, the essential elements of information usually are the sole basis for the intelligence information collection plan. Field Manual 30-5 does point out that information, other than to answer EEI, must be collected for the primary purpose of aiding the collection effort. This aspect usually is neglected or lost sight of completely. Further, EEI, relating to enemy capabilities generally become stereotyped, as normally an enemy is considered capable of attacking, defending, reinforcing, delaying, and employing nuclear weapons. In fact, many units in their standing

The nuclear battlefield requires that intelligence methods be reevaluated. Adoption of the commander's intelligence priorities in lieu of essential elements of information is a step in the reevaluation process

operating procedure specify standard essential elements of information. It is quite generally recognized that the term EEI has lost a great deal of its significance and frequently is considered to be an unimportant fetish of the intelligence officer with little real significance to unit commanders.

Despite the inapt title and stereotyped use, the essential elements of information concept does assist the intelligence officer in arriving at an answer to the question of what intelligence the commander needs, or, what must be looked for. However, the EEI concept has two major defects. It fails to recognize that all operations proceed by stages and that different items of intelligence vary in importance depending on the stage of the operation. The EEI concept also fails to recognize the reality that the ability of a command to collect information has definite limitations. These limitations dictate that the collection effort of a command must be directed, in turn, toward priority intelligence objectives. By definition essential elements of information cover *all* the intelligence information needed by the commander to accomplish his mission. No allowance is clearly made for the stage of the operation or the inability of a command to collect all the required information simultaneously. The necessity for establishing priorities within the total intelligence needs of the commander assumes even greater importance on the modern nuclear battlefield.

Lieutenant Colonel Irving Heymont served in Europe with the 5th Infantry Regiment during World War II. A graduate of the 1951-52 Regular Course of the USA CGSC, he commanded the 1st Battalion, 160th Infantry Regiment, in Korea; was advisor to the Chief of Staff of the Republic of Korea II Corps; and served as G3 at Headquarters, Fort Devens, Massachusetts. A frequent contributor to the MILITARY REVIEW, *he is the author of "Leadership of the Czech Satellite Army" (September 1956); "How Will Aggressor Fight an Atomic War?" (October 1956); "A New Look for the Soviet Ground Forces" (January 1957); "The Soviet Army Logistical System" (January 1958); and "Combat Surveillance" (October 1958). He was assigned to the faculty of the USA CGSC in 1955.*

The Modern Battlefield

The battle area of concern to a commander is now wider and deeper. For an infantry division, for example, the depth of division objectives has been increased from an average of about four to five miles to approximately eight to 10 miles. The width of the division area has been increased from some five to 10 to about 12 to 20 miles. The depth of the division area now is approximately 10 to 20 miles. As a result the division intelligence collection effort forward of the edge of the battle area alone must cover an average area of about 160 square miles as compared to an average area of some 30 miles before. Current rates of advance possible also are much greater. Forces can now move by helicopter at speeds of over 100 miles an hour. The speed at which the area of operations can change is much faster.

Just as we presently cover larger areas with our tactical dispositions, so do other armies. The depth of the area occupied by a Soviet rifle division in contact has been increased from about three miles to about eight miles. A Soviet rifle division in reserve can be expected to be at least 10 to 12 miles behind the forward edge of the battle area. Before the advent of nuclear fires, such a division would have been only about seven miles behind the line of contact. The Soviet rifle division defense area also has increased from about five miles to about seven and one-half to 12 miles in width. Many nations have weapons with great range capabilities. As a result, the intelligence officer must search a larger area to locate enemy forces, weapons, installations, and to determine enemy activities.

This problem is even further complicated because modern armies no longer

remain static or concentrated. The doctrine of most armies calls for dispersion on the nuclear battlefield by battalion-size units which move frequently under the cover of darkness or conditions of reduced visibility. Concentration for tactical activity takes place only at the last moment and then usually from the march with the concentration maintained the shortest possible time.

Commander's Intelligence Priorities

The necessity for intelligence priorities has always been present. However, the nature of the nuclear battlefield with its larger area of operations and faster tempo of change makes it even more imperative. Our intelligence methods must be revised to make unmistakable provisions for establishing meaningful intelligence priorities. The key to a new and improved method is the requirement of the commander for intelligence at each stage of the operation.

During the operation any item on which adequate intelligence is not available may be the difference between success and failure. At different stages of an operation—from the planning phase to completion of the mission—certain specific items of intelligence or information may be essential to the commander to allow him to arrive at a decision with an acceptable degree of confidence. These items represent information and intelligence of the characteristics of the area of operations and the enemy without which he cannot reasonably arrive at a sound decision.

At particular times the information and intelligence available may be sufficiently complete to permit the commander to arrive at a reasonable decision with adequate confidence. In such cases the commander has no outstanding priorities in his intelligence needs. However, at *no* time will the available information or intelligence be so complete that additional requirements for information and intelligence will not exist. The unavailable items, or item, of information or intelligence absolutely needed by the commander, at a particular time, in making a decision with an acceptable degree of confidence are the commander's intelligence priorities (CIP).

Commander's intelligence priorities may or may not be established, depending on the extent and accuracy of the available information and intelligence. As such, they are the highest priority tasks for the collection agencies of the command. After the allocation of available means by the intelligence officer to collect information required to satisfy the CIP, the remaining means are used for the collection of information that will satisfy the other intelligence requirements. These other requirements pertain to the *other* enemy capabilities, vulnerabilities, and characteristics of the area that could also materially affect the successful accomplishment of the mission. In addition, they also include other information required to assist in the interpretation of the results of the collection effort.

Difference in Concept

The CIP concept, in contrast to the EEI concept, answers the question as to what must be looked for and *also* what must be looked for *first*. The sum of the commander's intelligence priorities and other intelligence requirements equals the intelligence needs of the commander to accomplish his mission and the needs of the intelligence officer for particular information to assist in the interpretation of the information collected. Under the EEI concept, all these needs are lumped together without any indication of priority. The CIP alone represent the intelligence the commander needs at a particular stage of the operation or situation in order to make a sound decision with confidence. As such, they are the true intelligence priorities of the commander. As the commander's intelligence priorities obviously must vary with the situation and stage of the operation, they are meaningful and cannot be stereotyped.

The CIP of a tactical command at various stages of an operation may be:

1. Planning stage: "What drop or landing zones exist in our objective area? Special attention to. . . ." "Will the enemy extend his exposed west flank? Special attention to. . . ."

2. Completion of preparations stage: "Will the enemy attack prior to (a specific time)? If so, ..." "Will the enemy change his dispositions? If so, ..."

3. Execution stage: "What targets suitable for nuclear attack will develop in the zone of the main attack? Special attention to. . . ." "Will the enemy reinforce? If so, ..."

4. At all stages for a specific operation: "Will the enemy start chemical and biological warfare: If so, ..."

In formulating CIP to be recommended to the commander, the intelligence officer coordinates closely with other staff officers. In tactical commands he coordinates most closely with the operations officer. In administrative support commands he coordinates most closely with the logistics officer. As intelligence is a command responsibility, the CIP are announced either by the commander or, more usually, by the intelligence officer in the name of the commander.

The fact that an item of information or intelligence is prescribed for collection or dissemination in accordance with standing operating procedures does not prevent its being listed as CIP. For example, a standing operating procedure may require all units to report immediately such items as "known or suspected nuclear targets or indications of their existence or development." Whether or not such items are in the unit standing operating procedures, they are listed as *CIP if they are of overriding importance to the commander at the particular time.* Commander's intelligence priorities normally do not include items which can be fulfilled by reconnaissance of areas under friendly control.

Only those CIP are announced which can be fulfilled with the means available to the command. For example, CIP pertaining to enemy air or nuclear capabili-

UNIT:

Period covered: From: _____ To: _____

(1) *Commander's intelligence priorities and other required intelligence items*	*(2)* *Indications (analysis of items in column (1))*	*(3)* *Basis for specific orders or requests*	*(4)* *Agencies to be used* — *List all available agencies to be used in the collection of required information*	*(5)* *Place and time at which information is to be reported*	*(6)* *Remarks*
List the CIP announced for the operation or period, and other required intelligence items, spaced sufficiently to permit entry in column (2) of all indications pertinent to each item.	List opposite each item in column (1) those indications which best provide an answer to the question asked or implied by each item.	List the specific information sought in connection with each indication.	Place an X under each agency that has or can get the information bearing on each indication. The agency (or agencies) finally selected to obtain the information is indicated by circling (X) except for SOP items for agencies under the control of the unit.	Place: headquarters or staff section to which information is to be reported if other than the issuing headquarters. Time may be a specific time, periodically, or as the information is obtained.	Notes for future actions and to indicate progress of the collection effort.

Collection Plan Format

ties rarely are announced at division level and are omitted frequently at corps. Echelons below field army level normally do not have the capability to collect information that will result in the required intelligence. Some CIP are not announced to the command but the information and intelligence to answer them must be obtained from higher and/or adjacent headquarters.

The development of a collection plan under the CIP concept follows the same sequence as before. From the CIP and other intelligence requirements, indications are developed. Indications are further refined into specific request for information. The chart illustrates a collection plan format to record this process.

Although a collection plan has been prepared, and the necessary orders and requests issued, the intelligence officer has not completed his tasks in securing the answers to the CIP. As always, the intelligence officer must supervise the collection effort actively, continue to exploit vigorously every means of collecting information, and process the results of the collection effort.

To exist and succeed on the modern nuclear battlefield requires more than new organizations and additional and new equipment and weapons. Methods, regardless of their success in the past, must be reevaluated in the light of new requirements. With the faster tempo of the nuclear battlefield, the CIP concept better serves the needs of the commander than the outmoded concept of EEI.

Every military commander has to consider the effects of the weather on the battlefield. If we could know when storms are coming, when it is going to be foggy, and when rice paddies would overflow and flood the valleys, we would have certain real advantages. If advance information of the weather could be predicted and monitored from space, this would be an important tactical breakthrough.

Proper information of enemy movements on the battlefield might have changed almost all of the classical battles of history. Today, we are developing drone aircraft, infrared and radar devices to improve this capability.

Lieutenant General Arthur G. Trudeau

JOMINI AND THE PRINCIPLES OF WAR

Major Gordon J. Lippman, *Infantry*
Headquarters, 8th United States Infantry Division

FIFTY-SIX years in the active service of the Russian colors is enough to stagger the imagination. Add to that approximately 13 years of miltary activity with the French and Swiss Armies, and we have a military author who has exerted a strong influence on the art of war—Antoine Henri Jomini.

One who pursues the profession of arms must be just a little envious of this soldier-author who lived a life so replete with excitement and adventure. The military reader who subscribes to Jomini's "helpful hints to hopeful heroes" will find them more stimulating and enjoyable after a brief look into his fabulous background.

At the early age of 19, in the year of 1798, Jomini attained the rank of major in the Swiss Army, took charge of a bureau in the Swiss war office, and became an aide to the Swiss minister of war. During the next seven years he worked, wrote, and studied in quest of military knowledge. Endowed with considerable vision for a man of his years he chose to concentrate his efforts on Napoleon's grand strategy and tactics. Reference material was readily available to him, for Napoleon was, at this time, still the bright star on the military and political horizon of Europe.

In 1805 Jomini volunteered to serve as an aide-de-camp for Napoleon's VI Corps Commander, Marshal Ney. This move proved to be a fortunate occurrence, for it took place at the opening of the Ulm campaign, and revealed Jomini's mastery of Napoleonic strategy. Jomini was opportunist enough to exploit the situation, and by the end of his first year in the French service he was appointed to a position on the French Army Staff, with a commission in the grade of colonel.

Napoleon soon came to value Jomini's association, probably as much for Jomini's code of ethics and sterling character as for his superior staff ability. It is not beyond reason to assume that Napoleon believed that Jomini, who possessed the potential of a great historian, might provide him with another stepping stone toward immortality. More than an ordinary historian, Jomini had the capability of portraying Napoleon's grand strategy for posterity accurately and objectively.

Jomini Resigns

In spite of Jomini's role as a part-time confidant of Napoleon, he failed to gain the favor of Marshal Berthier, Napoleon's Chief of Staff, and Berthier's enmity subsequently caused Jomini to resign his commission in the French service while in the grade of brigadier general and after having devoted eight years to the French cause. Jomini's motives for resignation can be regarded as somewhat selfish, for he knew that he could progress more rapidly in the service of Alexander, the Czar of Russia. Although the Russians had made overtures prior to this time, Jomini had failed to accept or decline their offers until this opportune moment. He had believed, to this point, that his ultimate

In spite of the current scientific and technological approach to modern warfare, accelerated educational programs, and new weapons systems, the principles of war as set forth by Jomini still are valid and applicable

success rested in the hands of the French; in addition, he looked upon Bonaparte as an idol.

At the time of his parting the French and Russian Armies were at peace so his departure was made easier, and he looked less the traitor in the eyes of the French. Since he was Swiss born, and these were the days of the "professional soldier of fortune," Jomini was perfectly within his rights. At the outset the French were somewhat provoked by his decision, but later vindicated him in reward for his contributions to the "military art."

Jomini died in 1869, at the age of 90, having committed to writing much of what he had learned during his full lifetime. He died with the personal belief that he had established beyond doubt the fact that war, in its ensemble, was an *art* and not a *science*, and that there were certain principles which, when properly applied, would most often lead to success in war. This belief of Jomini's probably will fail to excite the imagination of the 20th century reader unless he harks back to the fact that Jomini was one of the first to realize the existence of, and write about, *The Principles of the Art of War.*

Major Gordon J. Lippman is the author of "Have the Confidence to Confide," which appeared in the August 1957 issue of the MILITARY REVIEW. *During World War II he served in the 517th Parachute Infantry Regiment in the United States and Europe. He received a battlefield commission in France in 1945 and until 1950 was a member of the 82d Airborne Division. He was with the 24th US Infantry Regiment, 25th Infantry Division, in Korea, and the 34th Infantry Regiment, FECOM, Japan, until November 1951. Other assignments include duty as instructor at the U. S. Army Infantry School; advisor with the Army Reserve Advisor Group, Vancouver Barracks, Washington; and commander, 8th Administrative Services Company, 8th US Infantry Division. A graduate of the 1955-56 Regular Course of the U. S. Army Command and General Staff College, he is now with the Office of the Chief of Staff, 8th US Infantry Division.*

At this point the disciples of Clausewitz arise and rightfully so, for as a military author, living in the Napoleonic era, he contributed equally as much as Jomini toward the same common goal. The evaluation of each of their contributions is left to the reader, since it is not the purpose here to argue the merits of either side. Suffice it to say, Jomini expressed himself as the author of a system which when applied with intelligence would, more often than not, lead to success. Clausewitz, on the other hand, decried systems for he felt no system in itself could achieve success. Although Clausewitz criticized some of Jomini's written word, it does not appear from this distance in time that they were far apart in their thinking.

Napoleon the Example

The influence of Jomini's writings on the art of war is more pronounced when one considers that prior to the release of his works there existed relatively few military textbooks even closely related to the subject of principles. By and large, preceding military texts dealt more often with a discussion of the details of the dress of the soldier, the manual of arms, and the description and use of military formations. The most advanced level of military source material for continental armies prior to the beginning of the 19th century was concerned with stories of the tactics employed by a leader (usually the author) and his own armies, without reference to a broad set of principles for waging war. That these armies did not make use of some of the same principles we use today is not implied, but it remained for Jomini, who possessed the forethought and afterthought to study the famous battles and leaders, to recognize the pronounced principles, expand upon them, and preserve them for posterity.

Jomini relied principally upon the campaigns of Napoleon from which to draw

his examples of success and failure. Rightfully so, for most historians agree that Napoleon exerted more influence on modern warfare than any other leader. The lion's share of Napoleon's endeavors must be credited to Napoleon for he fought the battles, but some recognition necessarily must be awarded to Jomini who, out of his understanding of Napoleon, so accurately committed to writing the thoughts, intentions, and actions of the emperor, in order that those who followed could benefit therefrom.

Napoleon's campaigns may appear to have an ancient and musty flavor to all but the military historian; hence Jomini's writings become more palatable to the layman when applied to the battles and leaders that Americans can more readily call to mind.

The earliest American military enterprise which could have been influenced to any extent by Jomini's written word would have been the "War Between the States," for the preceding 30 years had been his most fruitful in this field. There is no way of knowing how many leaders of that war were influenced directly by his writing, but at least some of them were. General McClellan was an advocate, and indicated that a great number of his contemporaries marched into battle with Jomini's *Summary of the Art of War* in their back pockets. Looking objectively at McClellan might cause one to wonder if he was an apt pupil.

Jomini must have concurred heartily in McClellan's basic strategy which opened the peninsular campaign in 1862, but probably was not overly enthusiastic about the execution phase of the battles which decided the campaign. McClellan's basic strategy provided for a grand turning movement, with the delivery of the mass of the Union resources at a *point* which could have been *decisive*. A page out of Jomini's book which relates to the selection of objectives states:

In strategy the objective of the campaign determines the objective point. *If this aim be the offensive, the* point *will be the possession of the hostile capital or that of a province whose loss would compel the enemy to make peace. In a war of invasion the capital is ordinarily the objective point.*

McClellan adhered strictly to the book and landed his force numbering slightly over 100,000 men at Fortress Monroe, a scant 85 miles east of Richmond. Opposed by only 13,000 Confederates, in an extended defensive position stretching south from Yorktown across the peninsula, McClellan failed to follow Jomini's next bit of advice dealing with this subject:

. . . to be indefatigable in ascertaining the approximate position of the enemy, to fall like lightning upon his center, if his front was too much extended or on that flank by which he could more readily seize his communications, to outflank him, to cut his line, to pursue him to the last, to disperse and destroy his forces.

To this Jomini added:

As it is essential in an offensive battle to drive the enemy from his position and to cut him up as much as possible, the best means of accomplishing this is to use as much material force as can be accumulated against him.

Perhaps McClellan misunderstood this last, for he allowed his army to stagnate on the peninsula for months, while he brought up siege guns to deal with the 13,000. Meanwhile the Confederates drew off from the north that force which finally was able to defeat McClellan and dislodge him from the peninsula.

Contrast McClellan's actions with those of General MacArthur in the Inchon landings in Korea in 1950. The maneuver was strikingly similar; however, the results were far different due to the aggressive

attack and pursuit following the Inchon invasion.

General McDowell and his entire Army of the Potomac lived to fight another day because Beauregard and Johnston failed to follow up their victory at the First Battle of Bull Run in 1861. This probably displeased Jomini, who wrote:

A pursuit should generally be executed as boldly and actively as possible, especially when it is subsequent to a battle gained, because the demoralized army may be wholly dispersed if vigorously followed up.

Something of a half-hearted pursuit was ordered in this case, but it was only a token effort and produced no decisive results. Contrast this action with the driving thrust made by the Allied forces in the breakout from Normandy in 1944 —again success followed a vigorous offensive and a pressing pursuit.

"Stonewall" Jackson

"Stonewall" Jackson must have acquired considerable stature in the eyes of Jomini, for these two thought alike in many ways. There is no information available which indicates that Jackson was a student of Jomini, but it is not unreasonable to assume that he was, such was the extent of his lifelong search for military knowledge. Jackson's battles in the Shenandoah Valley in 1862 were classics in the field of offensive action and mobility. His continued application of the principle *economy of force*, to hold the enemy in position with a small portion of the forces available, while striking elsewhere with the larger portion, gained him victory after victory.

It had been Jackson's assignment to provide the diversion which would keep McDowell's corps contained in the north while Lee moved the remainder of the available Confederate forces from the sector, in an effort to deny McClellan the opportunity of seizing Richmond as a prize. Jackson's brilliant execution of the mission, although vastly outnumbered, caused the Union governing body to become so concerned for the safety of Washington that McDowell was deterred from joining McClellan by overland route. Had he been allowed to proceed, and thereby press the Confederate on another flank, Lee would have had a difficult time saving Richmond, as well as his Army of Virginia. At this point all popular support of McClellan's vast enterprise collapsed and he was left to his own devices. Jomini had foreseen success in the type of action at which Jackson was so adept, and wrote:

. . . induce the enemy to divide his forces by making feints with small forces at important points. . . .

The years spanning the Civil War and the Korean war have produced countless examples of the use of *The Principles of the Art of War* as set forth by Jomini indicating that they have become universal in their application. The entire peninsular campaign, as directed by both opponents, is a classic example of the application of the majority of the principles: mass, economy of force, maneuver, and offensive. More recent examples of the brilliant application of the principles are revealed in the containing action by the forces in Italy and the invasion of France in 1944 or the holding action within the Pusan perimeter while the invasion of Inchon was executed.

Cavalry Mission

Although the role of the cavalry has been many times misunderstood over the wars, Jomini cast the correct light upon that arm without paying it less than its due when he wrote:

The principal value of cavalry is derived from its rapidity and mobility. To these characteristics must be added its impetuosity, but we must be careful lest a false application be made of this last.

Whatever may be its importance in the ensemble of the operations of war, cavalry can never defend a position without the support of the infantry. Its chief duty is to open the way for gaining a victory, or to render it complete by carrying off prisoners and trophies, pursuing the enemy, rapidly securing a threatened point, overthrowing disordered infantry, covering retreats of infantry and artillery. An army deficient in cavalry rarely obtains a great victory, and finds its retreats extremely difficult.

Jomini must have been in complete agreement with the splendid employment by J. E. B. Stuart of his Cavalry Corps. Although the Union was a little slower to put an effective cavalry representation into the field, theirs was no less effective than the Confederate cavalry later in that war. Sheridan's smashing use of this weapon further bore out Jomini's teaching as did Grierson's brilliant cavalry action during the Battle of Vicksburg. In more recent wars our use of armored cavalry, rangers, and airborne units has not departed greatly from the maxims laid down over a hundred years ago.

Principles Still Valid

The comparison and contrast of Jomini's maxims and principles, as applied to military actions in which Americans have been engaged, is endless. Regardless of the number of books written about battles and leaders, in the past or future, the fact remains apparent that the "art of war" has been influenced by Jomini's writings. Those leaders who have studied them and applied them intelligently have more often than not been successful.

In light of Jomini's primary contribution, the Principles of War, there might be a tendency to overlook his sage wisdom and outspoken thoughts about the essentials of war—that is, the countries, the populations, the motives for war, and the different types of war. Equally stimulating are his observations of the selection of leaders, and the matter of providing for logistical support for armies. Over the span of 100 years the basic facts in their most simple wording remain mostly unchanged, for instance, his 12 essential conditions which concur in making a perfect army. They are:

1. To have a good recruiting system.
2. A good organization.
3. A well-organized system of national reserves.
4. Good combat, staff, and administrative instruction.
5. A strict but not humiliating discipline, and a spirit of subordination and punctuality, based on conviction rather than formalities of the service.
6. A well-established system of rewards, suitable to excite emulation.
7. The special arms of engineering and artillery to be well instructed.
8. To have an armament superior, if possible, to that of the enemy, as to both defensive and offensive arms.
9. A general staff capable of applying these elements and organized to advance the theoretical and practical education of its officers.
10. A good system for the commissariat, hospitals, and general administration.
11. A good system of assignment to command and of directing the principal operations of war.
12. To excite and keep alive the military spirit of the people. None of these 12 conditions can be neglected without grave inconvenience.

Many of these same conditions applied during the early history of the United States and were described by General Washington following the Revolutionary War; doubtless they will apply for generations to come.

The thoughts expressed by Jomini about governments and armies in *Summary of*

the Art of War, written in 1837, are as pertinent today as they were when first written.

We are far from saying that a government should sacrifice everything for the army, for this would be absurd, but it ought to make the army an object of its constant care.

There are, indeed, forms of government which do not always allow the executive the power of adopting the best systems. When the control of public funds is in the hands of those affected by local interest or party spirit, they may be so overscrupulous and penurious as to take all power to carry on the war from the executive, whom many people seem to regard as a public enemy rather than as a chief devoted to all the national interests. The abuse of badly misunderstood public liberties may also contribute to this deplorable result.

I am far from advising that states should always have the hand on the sword and always be established on a war-footing. Such a condition would be a scourge for the human race, and would not be possible except under conditions not existing in all countries. I simply mean that civilized governments ought always to be ready to carry on a war in a short time—that they should never be found unprepared.

If in ordinary times, under the restrictions of constitutional forms, governments subjected to all of the changes of an elective legislature are less suitable than others for the creation or preparation of a formidable military power, nevertheless in great crises these deliberative bodies have sometimes attained very different results and have concurred in developing a national strength to the fullest extent.

It is particularly necessary to watch over the preservation of armies in the interval of a long peace, when they are most likely to degenerate. It is necessary to foster the military spirit in the armies and to exercise them in great maneuvers which, though faintly resembling actual war, still are of decided advantage in preparing them for war.

On Rewards and Leaders

In yet another matter which recently has found a sympathetic ear in the United States Army, Jomini wrote:

As to rewards and promotions it is essential to respect long service and at the same time open the way for merit. Three-fourths of the promotions in each grade should be made according to the roster, with the remaining fourth reserved for those distinguished for merit and zeal.

The subject of the selection of military leaders (about which every layman and expert has said a great deal) warranted the following treatment from Jomini:

The most essential qualities for a general will always be: first *a high moral courage, capable of great resolution;* second *a great physical courage which takes no account of danger. His scientific or military acquirements are secondary to these. It is not necessary to be a man of vast erudition; his knowledge may be limited but it should be thorough and he should be perfectly grounded in the principles at the base of the art of war. Next in importance come the qualities of his personal character. A man who is gallant, just, firm, upright, capable of esteeming merit in others instead of being jealous because of it, and skillful in making this merit add to his own glory, will always be a good general and may even pass for a great man.*

In spite of the current scientific and technological approach to modern warfare, accelerated educational programs which are designed to turn out leaders, and new and mighty weapons systems, such sage observation is still applicable.

Jomini envisioned some changes in military systems, although probably not to the

extent that have been realized, when he wrote:

The inventions of the last twenty years (1817-1837) seem to threaten a great revolution in army organization, armament and tactics. Strategy alone will remain unaltered, with its principles the same as under the Scipios and Caesars, Frederick and Napoleon, since they are independent of the nature of arms and the organization of the troops. The congreve rockets, the effect and direction of which it is said the Austrians can now regulate, the shrapnel howitzers, which throw a stream of canister as far as the range of a bullet, the Perkins steam-guns, which vomit forth as many balls as a battalion—all will multiply the chances of destruction. . . . The means of destruction are approaching perfection with frightful rapidity.

Conclusion

Jomini's influence on the "art of war," through his writings, is clear when one recognizes that all manners of endeavor must have a starting point. He provided that point, in that he was one of the first known military authors to outline his principles in writing, so that his successors would have a guide to follow. His *Principles of the Art of War* possess a certain timeless quality which, although they may change slightly in the technique of application, will be relied upon by the military men of the future as they have been relied upon since 1837. That they are recognized in teachings in military institutions the world over is proof enough that they are valid principles which have withstood the ravages of time and wars—and come through unscathed.

The fundamental reason for the existence of our Armed Forces is to prevent war. The word "deterrence" is heard more and more as describing the objective of our military preparations. We mean thereby that the Armed Forces seek to possess appropriate military power which will deter any would-be aggressor from pursuing his objective by military means. This capability is necessary because the nations whose objectives constitute the greatest threat to world peace today—the nations of the Communist bloc—use war calculatingly, as a means to an end. By possessing the power to prevent their attainment of that end, our military strength helps to preserve peace by removing the profit from aggressive war. That is to say, our strength convinces an aggressor nation to refrain from following a course of action which seems doomed to fail.

Military threats to peace can take many forms. Consequently, if our power is to serve its purpose, it must have characteristics which give it the capability of successfully countering the various forms of danger which are likely to occur; it must be broad in applicability and balanced in content.

General Maxwell D. Taylor

CAN'T LIVE WITHOUT THEM

Lieutenant Colonel Anthony L. Wermuth, *Infantry*
Student, United States Army War College

THE American division is shrinking in units and manpower to fit new concepts. Some of the deleted units, rooted out of a comparatively protected home within a division, are standing around rather nakedly as nondivisional units. It may be that these units sense a peculiar vulnerability in their status, a status which is based only partly on wartime experience. However, the fact that these units are now nondivisional in no way detracts from their importance to the combat structure of the division or the Army. Their status, in fact, represents an interesting compromise between peacetime and wartime considerations.

One of the official results of the Army's study of World War II was a form of centralization on a relatively grand scale, applied to the organizational structure of the division. The postwar tendency was to put everything into the division but a bidet, against the possibility that the division might have to fight in any of a wide variety of situations: hot, cold, or sopping wet weather; practically alone, or teamed with small-weaponed allies, or part of a 100-division juggernaut; airlifted, beach landed, or what have you—the possible variety of situations outnumbers Heinz' famous 57. Might the division need tanks besides those in the regiments? Well, yes, better put in a tank battalion. Will the division need antiaircraft protection? Yes, better throw in a battalion of AAA, too. Might anything else be needed? Whatever it is, put at least one in the division's basic structure. Even if you, as a commander, never have to use it, it will be comforting to have it under your hand.

The Pendulum Swings

Inevitably, for the conflict in viewpoint underlying these theories is an age-old conflict in organizational philosophy, reaction set in. Especially in response to our experience in Korea, it became clear that we had placed too much in the division structure, that some of the division's organization and equipment was superfluous, or irrelevant, or at least partially maladjusted to the problem at *that* time and place. The pendulum was criticized for having swung too far, and was invited to swing back.

In time, the countervirtue of pooling support units came to be stressed as an overriding virtue. If a division needs certain types of support units in one theater, they would be made available; they would be added to the units sent to support the divisions in that area. If not needed, however, they would not be present and in the way, idle and using up spaces in theater combat support strength that would be much more profitably devoted to other types of units.

This is basically sound organizational planning. It is economical, and husbands the dwindling strength of the Army. To be sure, it takes a risk that the forces sent immediately to a danger area may be un-

When the supporting structure of a division is cut, the combat power of the division also is cut. Nondivisional support units are an indispensable part of a division's strength and should not be reduced indiscriminately

balanced, that not all the special-purpose support units would be available. But almost any solution takes a risk, and the risk in this instance, so long as it is recognized and accepted, can remain a normal one.

The ease with which this could become an abnormal risk is, however, an aspect that does not readily meet the eye, for it is largely a hidden risk, like a sharp-toothed coral reef under the smooth waves of the future.

Division Measuring Stick

The American Army, like most modern armies, is keyed to the division structure. In fact, throughout the modern world the division in many respects is the universal measuring stick for comparing the size and strength of ground forces. The "division slice" is a widely used term to express certain measures of military strength. Nevertheless, around the world, what goes into the composition of a division varies from very little to very much; the differences may be significant, even crucial.

In the United States Army structure the power of the American division is inextricably interwoven with its backup, its supporting structure. In fact, its total power is dependent largely upon its support—its fire support in the form of artillery, tanks, aircraft, and other weapons, and its highly efficient logistic support of supply, engineers, trucks, and airlift. This support is provided in *units* that may be set up on a sliding scale of availability, or in a flexible system of ready attachment and detachment under certain conditions.

Undoubtedly, some ratio eventually will be worked out carefully by the Army planners, to the effect that so much of certain kinds of power must remain in units organic to the division, while certain degrees of the same or other kinds of power must be formed only in nondivisional units which, in turn, will be assigned to support divisions only in special circumstances.

Nondivisional Units Essential

The point is that whatever the figures turn out to be which justify taking power out of the division and keeping it flexible but handy, that detached power still is essential to the division's total power. Whether it happens to be assigned inside or outside the division structure in normal uncommitted circumstances, the power must arrive on the battlefield when the division is committed to that type of situation.

As the division gets smaller and smaller, and as more and more of its power is taken out and put into backup units, there is a danger that it eventually will become less apparent that the part of the division's power kept outside the division still is an indispensable part of its strength. Even nonmilitary agencies and officials do not agree lightly to cut divisions. But when cuts in Army strength impend, it will be easier for the uninformed to assume that it is feasible to cut nondivisional strength without harming the Army. Particularly when there recur those familiar admonitions to extract a higher ratio of "combat strength" to total strength, it may appear expedient to cut nondivisional units and simultaneously to cry, "But see! We have not cut *divisions*! It follows that we

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have not cut the Army's combat strength!"

This, however, is an illusion. When you cut the backup of the American division by 25 percent, you simply cut the combat power of the division by 25 percent. No other result is possible.

Conclusion

It makes sense, especially in times of austere strength ceilings, to take some of the "floating" power out of the division and to let it "float" on a wider scale in nondivisional units. But because normal circumstances have rendered it reasonable to make these certain units nondivisional, they have not thereby become expendable.

Wherever in the world the Army division may be in some future battle area, if the power of those backup units is needed at all, it will be needed badly. No matter how tempting has been the proposition to cut out the backup units, there will be no convincing a weakly supported division that it was a choice that seemed reasonable at the time. When that backup power is needed, it had better be there!

The first purpose of the military strength which the United States maintains is to prevent war. The best way we know to accomplish this aim is to present a convincing capability of being able to fight successfully, should fighting ever again be necessary. The basic premise we work from to preserve peace is the belief that a nation which resorts to cold-blooded aggression—as the nations of the Communist bloc have repeatedly done—is one which will use military force whenever it suits its political purpose. Such a nation, or group of nations, fights not for principle but for gain. Accordingly, it expects a profitable return on its investment. Our aim is to develop that degree of military capability which will convince any would-be aggressor that any gains he might hope to win by military means would not be worth as much as the military price he would have to pay to win them.

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As is always true, improvements in weapons impose changes in tactics and in tactical organization. We carry out a continuous program of testing and analysis to determine alterations which should be made to our tactical doctrine. With reference to our organization, we have recently completed this conversion of all the divisions of the Active Army to the so-called pentomic structure. In contrast to the old "triangular" division, whose chief elements were three infantry regiments, the pentomic division with five battle groups affords a marked increase in flexibility and striking power. This type of division was designed to meet what we visualize the needs of modern war to be.

General Lyman L. Lemnitzer

THE GRAN SASSO RAID

Major Burton F. Hood, *Infantry*
Office, Deputy Chief of Staff for Operations

GERMANY, in the fall of 1943, was badly in the need of a morale stimulant. Her armies were falling back on all fronts, and mounting Allied strength portended the end of Adolph Hitler's Reich. Suddenly, against this somber background there occurred an exploit that rekindled the pride of every German. A small force of parachutists, led by Captain Otto Skorzeny, dramatically liberated Benito Mussolini from his captors high atop a virtually impregnable mountain, and delivered him to safety in Germany. Friend and foe alike applauded the bold concept and daring execution of the deed. The Nazi propaganda chief, Dr. Paul Goebbels, trumpeted to the world:

The liberation of the Duce has caused a great sensation at home and abroad. Even upon the enemy the effect of this melodramatic deliverance has been enormous. . . . There has hardly been a military event during the entire war that has so deeply stirred the emotions. . . . We are able to celebrate a first class moral victory.

Today, measured against the entire fabric of the war, the rescue of Mussolini assumes its true perspective. Certainly it did not alter the course of history, for, as even the exuberant Herr Goebbels would have admitted, moral victories do not win wars. It would be a mistake, however, for military students to overlook the lessons and implications of this type operation, since its use in future warfare may be extensive.

The Situation

The collapse of the Axis forces in Africa in May 1943 was the death knell to Italian colonial aspirations. The fall of Sicily three months later completed the series of military disasters that spread defeatism throughout Italy. In vain the Italian Dictator Mussolini made political and military changes hoping to stem off the growing antagonism that made him "the most hated man in Italy." The climax came on 25 July with a vote of "no confidence" by the Fascist Grand Council. Mussolini was deposed and placed in protective custody by Marshal Badaglio.

As might be expected, Hitler's reaction to the fall of his Axis partner was explosive. He saw in the sudden turn of events no ordinary government crisis, but a complete reversal of policy that could result in the ending of the war on unfavorable terms. Additionally, he held Mussolini in warm personal regard as the personification of the last of the Roman Caesars. Several courses of action were suggested by the German High Command, but all were subordinated to Hitler's wish to rescue Mussolini by any means available. It is interesting to note that not all of Hitler's generals shared his enthusiasm for the liberation of Mussolini. General Kesselring called it a "harebrained scheme," and Marshal Rommel stated in his diary

The success of the Gran Sasso raid demonstrates that strategic missions may be accomplished by small groups of specially organized and trained men. This capability should not be overlooked in today's modern Army

that he hoped "the job will not be put on my plate. I can see no good in it."

Six highly qualified officers were summoned to Hitler's field headquarters at once. After personally interviewing each officer, Hitler selected Captain Otto Skorzeny and gave him this assignment:

I have a mission of the highest importance for you. Yesterday Mussolini, my friend and our loyal partner in the struggle, was betrayed by his King and arrested by his compatriots. Now I cannot and will not abandon the greatest of Italians in his hour of peril. . . . Mussolini must be rescued, and speedily, otherwise they will deliver him up to the Allies. I therefore entrust you with this mission; its successful outcome will be of incalculable bearing on the development of future military operations.

The Plans

Captain Skorzeny was uniquely fitted for the task ahead. A huge, athletic man with a characteristic Prussian dueling scar on his check, he thrived on excitement and danger. Quite by chance he was selected to head the first German Commando Battalion. This organization was patterned very closely on similar British units. Every man was a parachutist and trained thoroughly as an infantryman and engineer with a working knowledge of demolitions, weapons, vehicles, and the customs and languages of his enemies. The unit was untested in battle, but chafing for action.

Now kidnapping is not one of the standard military operations described in the training manuals of any army. Consequently, Skorzeny could not rely on precedent for guidance in accomplishing his mission. He lost no time in jumping into the operation, however, realizing that time was precious and working against him. He wired immediately to his executive officer to fly 50 picked men, equipped for any contingency, to meet him in Rome. The following day he assembled his unit outside of Rome and briefed them only to the extent that they were going on an important raid.

If Mussolini were to be rescued, he first had to be located. Fantastic rumors of his suicide, abduction, and confinement in a sanitarium flooded Rome. Each had to be investigated and disproved. Official sources were closemouthed, and even the highly regarded secret service could not locate the Duce. Three frustrating weeks were spent with no trace or indication of where Badaglio had locked up the former head of the Fascist Government.

Finally, chance favored them with a casual remark of a naval officer who boasted that his cruiser had transferred the Duce to the port of La Spezia. Before plans could be perfected to abduct Mussolini from this town, however, he was once again transferred. More time was lost until it was determined that the Duce was interned in the naval fortress of Santa-Maddalena. Plans were immediately advanced for a sea-air-land raid on this prison. Again, frustration; Mussolini was transferred only a few hours before the plan was to have been put into execution. Finally, all indications pointed to the incarceration of the Duce in a hotel resort at the foot of the Gran Sasso peak in eastern-central Italy.

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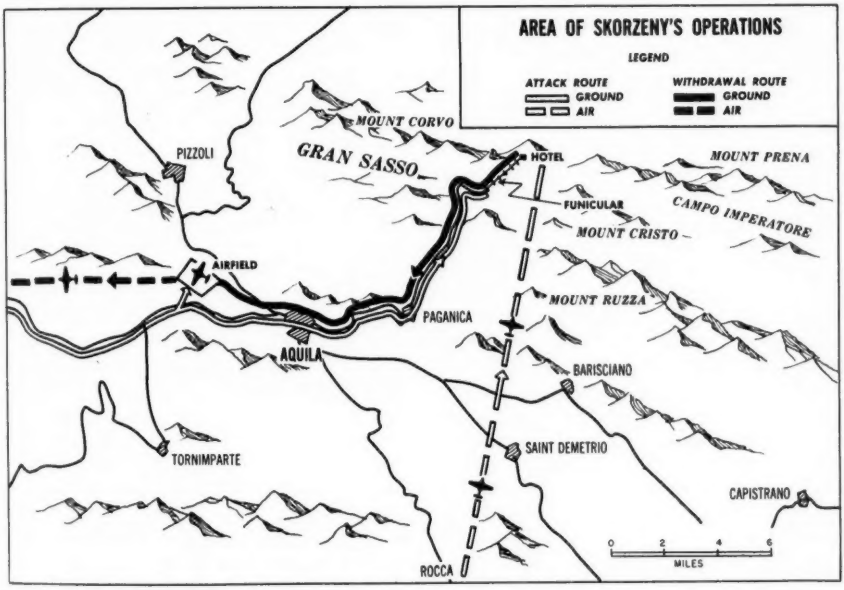
Accurate maps of this area were not available, and since the hotel had only recently been constructed it did not appear on any map. Patrols to the area were impossible and air reconnaissance would arouse suspicion, so it was decided to obtain more information by photographing from a small liaison aircraft. The photos revealed a massive building about 6,000 feet above sea level on a wild and jagged plateau of the Campo Imperatore Mountain chain. (See map.) Directly behind the hotel was a gently sloping meadow vaguely triangular in shape. The only communication with the valley floor was an alpine funicular railway.



There appeared to be three courses of action to be considered:

1. *A land attack.*—The steep slopes leading to the hotel plateau could only be traversed with difficulty with the resultant considerable number of casualties inflicted by the well-entrenched defenders. The carabinieri undoubtedly would be alerted and would kill or escape with their prisoner. A land attack was, therefore, rejected.

2. *A parachute attack.*—The standard available parachute would provide too rapid a descent in the rarefied altitude. Furthermore, the only possible drop zone was too small to accommodate the normal dispersion of a mass parachute jump. For these reasons, this course too, was rejected.

3. *A gliderborne attack.*—This course was extremely dangerous. The only landing zone was the small rock-covered meadow at the rear of the hotel. Two aeronautical experts stated flatly that a landing at such an altitude on this terrain was technically impossible and would entail the loss of 80 percent of the assault troops.

Since none of the plans offered much encouragement for success, the selection of one became a matter of selecting the least disadvantageous—the glider attack.

The plan as finally evolved called for a

battalion to move by vehicle to the vicinity of Aquila on the night preceding the assault. Timing its attack the next morning so as to arrive concurrently with the glider attack, the ground force was to seize the landing field at Aquila and the base station of the funicular railway. The airborne force was to consist of 12 gliders carrying nine troopers each. This force was to crashland in the field at the rear of the hotel, storm the building, and safeguard Mussolini. After securing the hotel, the force on the mountain was to radio to Rome for three aircraft to meet them at Aquila and transport them to safety. It was felt that, once alerted, the Italian Army would quickly close all roads leading to the area. Therefore, as an added precaution, Skorzeny ordered a light liaison type aircraft to be prepared to evacuate Mussolini from either the hotel or the airfield.

The Italian garrison at the hotel was estimated at approximately 250 carabinieri. Since the German force would consist of only 108 men, surprise and speed were all important. Skorzeny calculated that if the garrison would take more than three minutes to react to the assault, he would have time to seize the initiative. To help ensure this moment of indecision, he persuaded an Italian general officer to accompany the expedition and act as a decoy to create confusion in the minds of the defenders.

There followed days of intense preparation. Each man was briefed thoroughly on the layout of the hotel and his individual part in the action. D-day was set for Sunday, 12 September. The stage was set.

The Execution

Early on the morning of D-day the glider force arrived at the airport in good spirits for their adventure. Takeoff time was scheduled for 1300. Since the airplane and glider pilots were unfamiliar with the terrain an officer who had made the reconnoitering flight with Skorzeny was assigned to the first glider to guide the column to its objective. Suddenly, at H−30 minutes, the airfield was attacked by enemy bombers. Miraculously all of the planes and gliders escaped damage, so at exactly 1300 the column took off on schedule. The bombing attack had a belated effect, however, for two of the gliders struck craters and collapsed on takeoff reducing the glider force to 90 men. After rising to an altitude of 12,000 feet, it was discovered that the two leading gliders somehow had become separated from the column and were nowhere to be seen. Most distressing was the fact that the navigator was in the lead glider.

Skorzeny, in the third glider, now saw no alternative but to try to lead the column himself. Pulling out a knife, he cut a hole in the glider's canvas floor, and attempted to distinguish landmarks to enable him to get his bearings. His long study of the terrain chart now paid off, for he was able to locate a few conspicuous ground features toward which he directed the column.

At a few minutes before zero hour the objective area came into sight. Looking down at it, Skorzeny could see the ground forces approaching their targets right on schedule. As soon as the hotel appeared he gave the glider pilot the order to cut loose. As they approached the meadow rapidly in the thin mountain air, it became alarmingly evident that they had made a major miscalculation. The "gently sloping meadow" was instead a precipitous abyss. The only choice now was to call off the mission and land in the valley or attempt to crashland on the hotel grounds. After what must have been an agonizing mental conflict, Skorzeny ordered the pilot to land as near as possible to the hotel. Seconds later there was a violent, crashing jolt, and the glider came to rest after a run of less than 25 yards.

The troopers piled out of their shattered craft and found themselves not 20 yards from the wall of the hotel. Skorzeny, fol-

lowed by his squad, dashed for the hotel entrance shouting "hands up." Passing through the first open door, he entered a room and saw an Italian soldier sending a radio message. He knocked the soldier down and smashed the radio with the butt of his gun. Returning outside, he examined the façade of the hotel. On the second floor, gazing out of a window, was the object of his search—Mussolini. Skorzeny shouted to the Duce to withdraw from the window, and then he ran for the main entrance to the building.

By this time the Italians were pouring out of their billets, but so swiftly had the action occurred that not a shot was fired nor was serious opposition threatened. Skorzeny rushed to the room where he had seen the Duce, threw open the door, and was confronted by Mussolini and two armed Italian officers. At the sight of Skorzeny's threatening submachinegun, the officers quickly gave up their arms and Mussolini was in German hands—only four minutes after the initial landing. By this time the other gliders had landed. Number eight was caught in a gust of wind and crashed on the rocky slopes. There remained only the official surrender of the position by the Italian colonel in command to complete the triumph. This was arranged quickly, and the garrison was disarmed. By telephone it was discovered that both ends of the funicular railway were secured. Reinforcements were sent up immediately from the valley by cable car.

With success within grasp, another obstacle presented itself. The radio operator was unable to contact Rome and arrange for the return flight. The German force alone probably could have fought its way back to the base, but they dared not jeopardize their important guest. Fortunately, an alternative plan provided for a light plane to meet Mussolini at the airport in the event the transports should fail. This plane arrived on schedule, but as luck would have it, damaged its landing gear and was inoperable.

There now was no alternative but to attempt to land another light plane near the hotel grounds. An improvised landing strip was prepared, and with considerable skill a pilot fought the tricky updrafts to bring his craft in safely. Into the plane that was designed to carry only two men, Skorzeny and Mussolini now added their weight. After overcoming the understandable reluctance of the pilot, the plane was readied for takeoff. With inches to spare the plane cleared the edges of the plateau and righted itself only a few hundred feet above the valley floor. Skimming the ground to avoid Allied aircraft, the small plane finally made its way to Rome. From there Mussolini was transferred to a larger plane which took him to Vienna and temporary safety.

Otto Skorzeny was promoted to the rank of major, awarded the Knight's Cross, and warmly thanked by his Führer. He had indeed accomplished a mission that deserved to live in the annals of military daring.

Analysis of the Raid

Stripping away the aura of flamboyant adventure from the Gran Sasso raid reveals that there are some solid tactical and strategical lessons to be derived from this operation.

Tactical

1. The concept, plans, and execution of a strategic raid must be characterized by originality, surprise, flexibility, and boldness. All of these factors were evident in the Mussolini rescue. Skorzeny exploited the human weakness of overlooking the fantastically improbable event of a rescue attempt. He executed the mission so quickly and boldly that the defenders were paralyzed with indecision until it was too late.

2. Alternate plans must be provided for every contingency. The sensitive nature of a strategic target carries implicit violent reaction by the enemy. This means

that the raider must expect that all or part of his basic plan will go awry. He must anticipate these reverses by war gaming his operation thoroughly and by providing alternate means to overcome every obstacle. Had Skorzeny not anticipated that his primary withdrawal means might fail, he would not have provided alternate means and his mission probably would have been unsuccessful.

3. The ability to "roll with the punch" and improvise solutions must be inculcated in all raiders. In the Gran Sasso raid, Skorzeny suddenly found himself charged with the responsibility of leading an air column without navigation equipment. His inspiration to cut a hole in the glider floor and navigate by terrain features undoubtedly saved the expedition. It may not be possible to train personnel to come up instinctively with an improvised solution to every problem, but raid commanders should search for the type of man who has the basic intelligence and character to respond under pressure.

4. Good intelligence of all phases of the strategic raid is absolutely imperative. In no other type operation is intelligence so vital, since the failure of a strategic raid can carry such disastrous results. Not only may the raid fail, but the international political repercussions may turn world opinion against the attacker. Skorzeny's raid provides one example of intelligence failure that nearly doomed the operation. His proposed landing zone was, in fact, unusable, and only by the greatest audacity and sheer luck was the failure to determine this beforehand overcome. With intelligence, of course, goes counterintelligence. Complete secrecy concerning a strategic raid demands that plans include patterns for deception and frustration of the enemy's intelligence effort in a far greater measure than for a normal operation.

5. Boldness is the hallmark of a successful raid. This is accomplished by having the raiders trained for rugged conditions. The men must be mentally and physically equipped for taking advantage of the unexpected opportunity. Their leaders must be divested of a stereotyped mentality that inhibits original thinking. They must think, and truly believe, that the unlikeliest success is possible. The use of surprise and deception in all its devious forms is imperative. Although outnumbered and outgunned, Skorzeny achieved his success by exploiting surprise. His provision of an Italian general to confuse the garrison further was typical of the way he seized every opportunity to ensure success.

Strategic

1. It is generally acknowledged that warfare of the future will be characterized by wide frontages and relatively small combat units dispersed over the nuclear battlefield. This condition and the nature of our potential enemy strongly favors the increased importance of strategic raids for the following reasons:

a. Dispersion imposes a tremendous burden upon the defender. He no longer has continuous frontlines to deny penetration, and his defensive forces must cover much more of the rear area. This situation throws open the door to small unit infiltration by ground or air.

b. The defender must strongly defend his vital installations. A raiding force will tend to "hug" these objectives in their attack which presents the defender with the dilemma of trying to smash the relatively unimportant raiding force without hurting his own vital installation with the same weapon.

c. Increased area surveillance and aerial defense methods make it more and more questionable whether large-scale operations such as an airborne division attack will be feasible in the future. It seems, rather, that increased defensive capabilities will dictate that small units of perhaps company size will be the largest organizations that can successfully effect a penetration of the enemy's rear area.

d. New matériel advances make a relatively small raiding force into a decisive element. It seems probable that nuclears will be packaged for delivery by small units directly to the heart of an enemy installation. New airlift capabilities and lightweight equipment promise greater potential for lightning strikes into the enemy rear.

e. Our potential enemy has ruled by force over great areas containing many freedom-loving people. This presents a situation ripe for the exploitation of guerrilla forces. These forces are invaluable in strategic raids. They provide timely intelligence, assist in the execution of the operation, and provide an escape and evasion channel for the raiders. Raids can be conducted without the assistance of guerrillas, but their presence greatly enhances that capability.

2. The rescue of Mussolini was not accomplished by routinely trained troops. Skorzeny and his commando battalion had trained diligently for missions of this type. His men were volunteers, picked because they were "physically A-1, suitable for special tasks, mentally keen (and had a) strong personality." * Latecomers to the commando field, the German studied the raids of the Allies—especially the operations at Saint Nazaire, Dunkerque, Lofoten, and at Rommel's headquarters—for valuable technical lessons. When the opportunity came, the unit was ready.

The lesson here is clear. A modern army must have, in being, a specially organized, trained, and equipped force capable of undertaking strategic missions on very short notice. The nature of strategic targets requires men specially trained in techniques far different from routine training. These men are specialists in every sense of the word. They should be volunteers with above average intelligence and physical condition. The unit should have an elite status with high rank and prestige commensurate with the vital role it must play in future combat.

Strategic targets often are of a fleeting nature and an opportunity once missed may be disastrous. Had the Allies been able to seize Marshal Pétain during the crucial deliberations for France's future in 1940, the course of World War II might have been different. Again, what opportunities were lost to exploit the July 1944 assassination attempts of Hitler because of failure to raid the German headquarters?

A Joint Task Force for Strategic Raids should be operational in peace as well as war. The specialized techniques of strategic raids should be explored thoroughly by this organization. Specific targets should be assigned, and the functions and responsibilities for the several services should be determined. As a bonus effect from the operational capability of such an organization, consider the threat it poses to the enemy. Knowing that his adversary can strike a decisive blow anywhere in his country, he must divert resources for defense against this possibility. The mere threat of the abduction of General Eisenhower during the Battle of the Bulge was enough to increase American countermeasures manyfold.

Conclusions

Otto Skorzeny did not invent the *ruse de guerre*, but his application of it to modern warfare demonstrates that there is a place for this weapon in today's army. New technical discoveries further enhance this capability for they give virtually unlimited opportunity to destroy, subvert, or paralyze the enemy by a quick, decisive move.

Technical means of mutual annihilation have focused world attention away from the one incalculable secret weapon—man. In our haste to achieve weapons superiority over our potential enemy, there is a constant danger that we may overlook the ability of small groups of determined men to decide great issues by bold exploit.

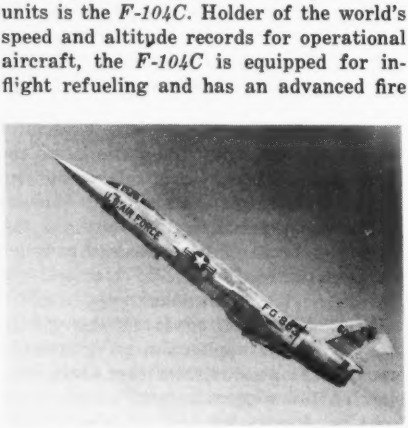
* Extract from a German General Headquarters Order, 1944.

MILITARY NOTES AROUND THE WORLD

UNITED STATES

New 'Starfighter'

The most recent model of the *Starfighter* series to be integrated into operational units is the *F-104C*. Holder of the world's speed and altitude records for operational aircraft, the *F-104C* is equipped for in-flight refueling and has an advanced fire control system that is said to be simpler, lighter, and only about one-third the size of that used in previous jet interceptors. This includes an infrared system and a "bright trace" radar display tube that reads easily even in the glare of bright sunlight. This aircraft also is the first production jet fighter to incorporate boundary layer control for added lift and slower speed in landing and takeoff. Other models of the *Starfighter* are the single-seat *A* models and the *F-104B* and *D* which are tandem two-seat developments used both as combat aircraft and operational trainers.—Official release.



The *F-104C Starfighter* is operational

Interceptors Modified

The modification of 131 operational *F-102A Delta Dagger* all-weather interceptors includes renovation of the electronic fire control system. This aircraft is equipped with the *MG-10* fire control system, and fires either *Falcon* guided missiles or the 2.75-inch *Mighty Mouse* folding fin rockets. This aircraft participated in Project *William Tell*, a recent world-wide interceptor competition which consisted of actual interception operations against jet-powered drone targets.—News item.

***F-102A* firing *Falcon* guided missiles**

Manned Spacecraft

The hypersonic, rocket-powered experimental *X-15*, designed to carry a man to altitudes exceeding 100 miles at speeds in excess of 3,600 miles an hour, will be powered by two 6,000-pound-thrust engines in initial tests. In later maximum operation flights it will be powered by a 50,000-pound-thrust engine using liquid oxygen and ammonia as fuels. The *X-15*, which is 50 feet long and has a 22-foot wingspread, has a complete external armor of Iconel X, a steel alloy that can withstand temperatures ranging from 1,200 degrees Fahrenheit to a minus 300 degrees. The spacecraft is designed to be launched from a *B-52 Stratofortress* about 45,000 feet above the earth, and will weigh almost 16 tons at launching.

The *X-15* has conventional controls for use within the atmosphere and will utilize hydrogen peroxide jets located in the nose and wingtips for attitude control where the air is too thin to permit effective operation of conventional control surfaces.

US Air Force Photograph

The experimental rocket-powered *X-15*

Liquid nitrogen is used as a coolant for both pilot and equipment, and is vaporized to maintain pressure in the cabin interior. The pilot will wear an aluminized full-pressure suit with interior oxygen supply. For landings, the lower part of the ventral tail is jettisoned.

The landing gear consists of a nose wheel and skids identical to that used in the *X-2*, a predecessor of the *X-15*. Its landing speed is about 275 miles an hour. —News item.

Personnel Carrier Tested

The Army's new aluminum armored personnel carrier, the *T113E2*, is under test in several Army installations. The *T113E2* weighs less than half as much as the *M59* personnel carrier which it will replace, and has a considerably lower silhouette. The vehicle can carry a squad of infantrymen across rivers and rough terrain, and can be airlifted and parachuted.

A number of versions of the *T113* are

US Army Photograph

Aluminum personnel carrier *T113E2* tested alongside the *M59* which it will replace

under consideration, including modifications as an antitank missile carrier, self-propelled weapons carrier, mortar carrier, rocket launcher carrier for such weapons as the *Little John*, ambulance, communications vehicle, cargo carrier, mobile command post, and mobile fire direction center. —News item.

Pneumatic Dunnage

Pneumatic dunnage to replace the conventional wooden shoring in the cargo holds of naval vessels and in railroad freight cars is under test. The new dunnage consists of specially designed tough elastic air pillows which weigh about 28 pounds each. The dunnage is used to fill the open spaces in cargo holds and freight cars to prevent shifting of the cargo during transport.—News item.

Mine Clearing Device

An improved version of the mine clearing Snake of World War II is now under field test. The Snake is transported in sections in standard trucks. After assembly, the 400-foot-long unit is towed by a tank to the minefield. It is then pushed out over the minefield by a tank and detonated by

US Army Photograph

Improved mine clearing Snake

firing a machinegun bullet into a special fuze. Specially designed charges provide improved mine clearing performance with less explosive than in the older model.—Official release.

Light Gun Pod

A light gun pod, enclosing a smaller and lighter weapon of the *Vulcan* type (MR, Nov 1957, p 66), has been developed for installation on fighter and other aircraft. Designed to fire the standard 7.62-mm NATO cartridge at rates of 6,000 to 10,000 rounds per minute, the weapon with pod is 90 inches long, 10 inches in diameter, and weighs only 188 pounds. —News item.

'BARC' Tested

The Transportation Corps' amphibious cargo barge, better known as the *BARC*, has been launched successfully from the 26-foot-high decks of standard Maritime Administration vessels. The only special preparation involved is the application of a commercial type paper honeycomb to the bow and ramp of the big vehicle to reduce the impact with the water.

The *BARC* is slightly less than 62 feet long and weighs almost 100 tons empty. In spite of its tremendous size and weight, the *BARC* will move easily over soft sand or sharp coral with payloads up to 100 tons. The tires of the big vehicle, over nine feet high, reduce the ground bearing pressure to permit traverse of almost any surface. For land steering, any one of three separate methods of steering can be used: conventional; by turning all four wheels; or by use of the rear wheels only.

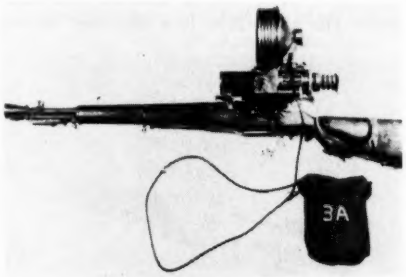
Each of the *BARC's* four wheels is powered independently by one 165-horsepower diesel engine through its own torque converter and transmission. In the water

***BARC* in experimental launching**

it is propelled by twin screws, each driven by the same diesel engines used for land operation. The big amphibious truck is said to maneuver almost as easily as a small vessel, and it can be steered by its engines if the rudder becomes inoperative. —News item.

Improved Sniperscope

The Infrared Weapons Sight Kit, T1, now in the prototype stage of development, is being tested as a replacement for the infrared standard set Nr 1, better known as the Sniperscope. This sight provides a means of engaging a target at night with no visible light source. It is being developed for the rifle, but it also is adaptable for automatic rifles, machineguns, rocket launchers, and recoilless rifles. The weight of the new equipment, including the infrared light source and power supply, is 10 pounds as compared to the 27-pound



Infrared Weapons Sight Kit, T1

weight of the Sniperscope it will replace. It has a range of from 250 to 300 yards which is more than double that of the earlier model.—News item.

Naval War Games

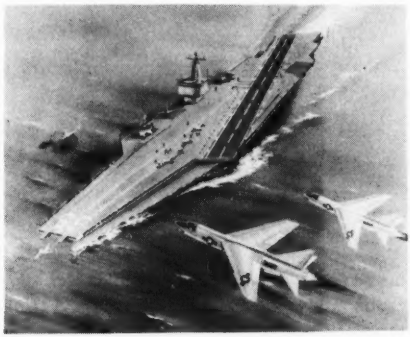
The Naval Electronic Warfare Simulator at the Naval War College permits as many as 200 commanders to try their skill at naval engagements using every conceivable weapon and weapon carrier, both conventional and nuclear, with speeds ranging up to 20,000 miles an hour. The device, which took four years to install, is housed in a three-story block-long building and comprises 2,889 pieces of equipment of 263 different types, 10,000 electronic tubes, and 2,500 miles of wire.

In operation, a total of 48 maneuverable forces are placed at the disposal of the two chief commanders in the action. When the opposing naval forces meet, a computer provides information on the firing effectiveness and on how the damage incurred will affect speed and fighting abilities of the target forces. Interaction of the forces involved is evaluated by an umpire who uses a digital analog computer to assist him in reaching his decisions.—News item.

Aircraft Carriers

The fourth of the *Forrestal* class aircraft carriers, the *Independence* (MR, Sep 1958, p 75), which was launched in June 1958 has joined the operational fleet. With the commissioning of the *Independence* only two more of this class remain to be completed—the *Kitty Hawk* and the *Constellation.*

The construction work on the United States Navy's first nuclear-powered aircraft carrier, the *Enterprise,* has progressed to the stage where the shielding for the nuclear propulsion units is being



US Navy Photograph

Artist's conception of the *Enterprise*

installed. The first two of the nuclear reactors of the land-based prototype powerplant for the big naval warship have gone into operation. This type of powerplant also will be used in the guided missile cruiser *Long Beach.*—News item.

Tiny Gas Turbine Engine

The *Solar Titan*, which bears the military designation of *YT-12*, is said to be the smallest gas turboshaft engine ever built. Only 20 inches high with a maximum diameter of less than 16 inches, the *Titan* will produce 55 shaft horsepower plus 12 pounds of jet thrust. It is designed for use in powering a one-man helicopter. The engine is designed to operate on standard

Solar Aircraft Company Photograph
***Titan* turboshaft engine**

military fuels, and is provided with hand-crank starting. Preliminary flight rating tests of the *Titan* have not been completed. —News item.

'Rotorcycles' Ordered

Five one-man *Rotorcycle* helicopters have been ordered for the Marine Corps. The *Rotorcycle* is powered by a 43-horsepower *H-63B* air-cooled engine. The lightweight helicopter, which weighs less than 250 pounds, is held together by quick-release pins and can be completely folded. From its folded condition, one man can assemble and fly it in less than five minutes. Its useful load is 256 pounds; it has a maximum speed of 70 miles an hour. —News item.

New 'Crusader'

The Navy's *F8U-3 Crusader III* aircraft (MR, Mar 1958, p 64) has a new type of air intake, a pair of folding ventral fins, and bleeds air from the engine compressor across the trailing edge wing flaps to improve the performance of its variable incidence wing during takeoffs and landings. The air intake is a modified version

US Navy Photograph
***Crusader III* carries *Sparrow 3* missiles**

of the configuration used in the *F-105 Thunderchief* containing a movable wedge to vary shockwave angles with flight speed to suit the engine requirements. The engine used in the *F8U-3* is the *J-75* turbojet providing 26,000 pounds of thrust with afterburning. The folding ventral fins are extended horizontally for takeoff and landing and are turned downward for greater stability during high-speed flight. The big all-weather fighter can carry either the *Sparrow 3* or the infrared *Sidewinder* missiles. A unique feature of the *Crusader III* is an advanced automatic "pushbutton" flight system.—News item.

Better Artillery Shells

Eight-inch artillery shells now are manufactured by a "hot-cup/cold-draw" method. This method saves about 25 percent of the starting material and requires 50 percent less man-hours. The shells produced are within one-half pound of the norm, in contrast to the 4.8-pound tolerance for conventionally made shells. The new shells are said to possess better balance and concentricity, resulting in greater accuracy and necessitating less field adjustment in powder charge or artillery elevation to compensate for variations in the weight of the projectile. Firing tests have revealed the new shell to have less dispersion and equal or superior fragmentation as compared to the conventional shell.

Former methods of manufacture required a steel billet weighing 290 pounds as the starting point for a 162-pound finished shell, as compared with the "hot-cup/cold-draw" starting weight of 190 pounds.

Other advantages are a reduced requirement for transportation in delivering the raw materials from steel mill to shell plant, one-zone loading which reduces the chance of selection errors during night artillery operations, and increased safety factors due to the reduced dispersion.—News item.

Foxhole Cover

A multipurpose foxhole cover is under test and development at the Marine Corps Landing Force Development Center. The cover, of which only a pilot model has been made, is 36 inches long, 26 inches wide, and 10⅝ inches high. It is constructed of fiberglass lamination with ballistic properties similar to the Doron plates used in the Marine Corps' armored vest. Weighing about 18 pounds each, two of the covers can be connected for use in supply operations and casualty evacuation.—News item.

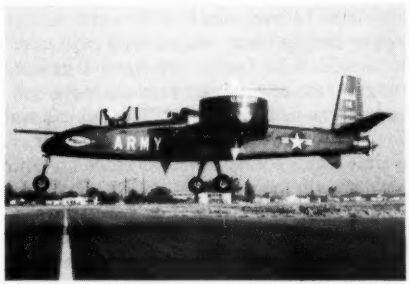
'Polaris' Submarines Named

Fleet ballistic missile submarines are to be named after patriots. The names of *George Washington, Patrick Henry,* and *Theodore Roosevelt* have been assigned to the first three vessels bearing the hull numbers of 598, 599, and 600 (MR, Jul 1958, p 66).

It also has been revealed that each of the new *Polaris* submarines will have two crews assigned, one to be off duty while the other mans the submarine. This is planned because the nuclear submarine's ability to stay at sea for long periods will make it necessary to rotate crews for continuous operation.—News item.

VTOL in Initial Tests

The *Doak Model 16* ducted-fan VTOL aircraft has completed ground tests and hovering programs, and is conducting transitional flight tests. These tests include vertical takeoff, rotation of the ducted fans from the vertical to the horizontal for flight as a conventional aircraft, and the rotation of the ducts back



VTOL *Model 16* in hovering test

for vertical landing. At all times the aircraft maintains a conventional horizontal attitude. Although designed to fill an Army requirement for this type aircraft for liaison, observation, and rescue missions, the *Model 16* is expected to find application by commercial agencies in feeder line service.—Commercial source.

Improved Missiles

Recently announced missiles include an improved air-to-surface weapon, a faster air-to-air missile, and a rocket that tests parachutes at high speeds.

The air-to-surface *White Lance* is developed from the *Bullpup* missile (MR, Aug 1958, p 67), and has the same general conformation as that weapon, with improved guidance and propulsion, and a "different" warhead. Information as to the propulsion system of the new weapon is not available. The guidance system for the *White Lance* has not been selected, although a system that would enable a pilot to control such a missile beyond visual range is said to be under consideration.

The *Bullpup* is a short-range guided missile weighing less than 600 pounds that is armed with high explosive and attains a speed of about Mach 2. It is 11 feet long and one foot in diameter.

The fourth in the family of *Falcon* air-to-air weapons is the *GAR-3*, scheduled to go into operation as principal firepower for advanced all-weather interceptors of the Air Defense Command. The *GAR-3* uses a solid propellant rocket engine and a "semiactive radar seeker type guidance." It is said to be faster and have a greater range than any of its predecessors.

A three-barrel test rocket, nicknamed *Cree*, is used to test three parachutes at a time at speeds up to 3,000 miles an hour and at altitudes of 26 miles. Cameras, mounted in the tail of the rocket, record the action of the parachutes which are ejected backward and independent from the missile. Ejection can be made through a timing device or by ground control.—News item.

Weapons Procurement

The Army will procure 70,000 *M14* and *M15* rifles from commercial sources and produce an additional 15,600 at its own Springfield Armory. A reorder program for Fiscal Year 1960 is being developed. The Army also has been authorized to procure 8,835 *M60* machineguns, of which 5,835 will be from commercial sources and 3,000 from Springfield.

The *M14* rifle, which fires the 7.62-mm NATO cartridge, is planned as a replacement for the present *Garand M1* rifle, the *M1* and *M2* carbines, and the *M3* submachinegun. It is one pound lighter than the *M1* rifle, has a 20-round magazine as compared to the *Garand's* eight-round clip, and has less recoil. The 7.62-mm cartridge is about 10 percent lighter and one-half inch shorter than the *M1* round. The *M15*, which is identical with the *M14*, except that it will have a heavier barrel, will replace the Browning automatic rifle.

The *M60* machinegun can be fired from the hip or as a shoulder weapon, and from a tripod or bipod. Its rate of fire is from 550 to 600 rounds per minute, and it uses the standard 7.62-mm NATO cartridge. Weighing only 23 pounds with shoulder stock and bipod, the *M60* features a quick-change barrel and gives the infantry its first machinegun light enough to be used for assault fire.—News item.

Zipper Tarpaulin

A tarpaulin that eliminates the necessity for the purchase of many different canvases for various requirements has been devised. The product, called Zipptarp, consists of panels of varying sizes and materials which may be zipped together by means of a plastic zipper track.—News item.

'Hercules' Installed

Nike Hercules antiaircraft missiles are to be installed in defense of the Fort Richardson-Elmendorf Air Base near Anchorage and the Eielson-Ladd Air Force Bases near Fairbanks, Alaska. They will replace the conventional 120-mm antiaircraft guns which have been guarding these key installations for several years. Construction of the *Nike Hercules* sites is scheduled for early completion.—News item.

PAKISTAN

Dispute Settled

Eight of 15 disputed India-Pakistan border sectors have been settled in recent negotiations. The agreements include the exchange of small border areas in the former Cooch Behar state in Pakistan and a Pakistan enclave in India. Another element of the pact was an agreement not to use force to upset the existing situation in areas still disputed and a plan to expedite border demarcation. Approximately one-half of the 4,000-mile border between the two nations is not clearly marked.—News item.

VENEZUELA

Trainer Aircraft

The Venezuelan Government has purchased 41 *Mentor* aircraft, 34 of which are planned for use by the Venezuelan Air Force, the other seven are to be used by the ministry of communications for government-operated civilian flying schools. The *Mentor*, also known under the US Air Force designation of *T-34A* and the Navy identification of *T-34B*, is a two-place primary trainer with retractable tricycle landing gear. It can be equipped with a machinegun or camera in each wing and bomb racks or rocket rails under the wings. In addition to Venezuela and the United States Navy and Air Force, the *Mentor* is in use in training pilots in Argentina, Chile, Colombia, El Salvador, Japan, Mexico, Spain, and Turkey.—News item.

AUSTRALIA

Vehicle for Army

Australian regular army units are to be equipped with the British-made Austin *Run-about*, an all-purpose vehicle which seats four persons and is capable of towing a one-half-ton trailer. When fitted out with special sealing and a snorkel type exhaust attachment, the *Run-about* can operate in water up to six feet deep.—News item.

Ahead of Schedule

The new Australian-made Belgian *FN .300* semiautomatic rifles, adopted as standard for the Australian armed forces, are to be issued to combat troops in early 1959, well ahead of schedule. The *FN .300* is to replace the *.303 Lee Enfield* rifle currently in use by Australian soldiers. The other basic weapons of the Australian armed forces, the *Bren* light machinegun and the Australian-designed and manufactured *Owen* light automatic, are to be retained in service.—News item.

NORWAY

Submarine Killer

The *Terne*, an antisubmarine weapon system developed by the Norwegian Defense Research Institute, has received extensive tests aboard the Norwegian frigate *Balder*. The *Terne*, which is said to be so compact that it can be installed in vessels down to 500 tons displacement, will be produced in Norway and made available to all NATO member nations. The *Terne* system utilizes a sonar detector to determine a submarine's range, depth, and direction. These data are fed into a predictor which automatically calculates the firing angles and aims a rocket launcher, containing six depth charges, at the target. The rockets are equipped with proximity and time fuzes, and the loading of the launcher is a completely automatic operation.—News item.

TURKEY

Submarine Commissioned

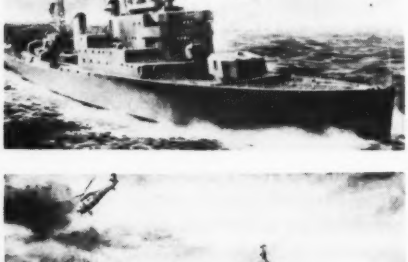
The former United States submarine *Bergall* has been commissioned in the Turkish Navy. The *Bergall* is the eighth *Balao* class submarine to be transferred to Turkey under provisions of the US military assistance program. The 2,425-ton submarine is snorkel-equipped, armed with ten 21-inch torpedo tubes, and capable of a speed of 20 knots on the surface and 10 knots submerged.—News item.

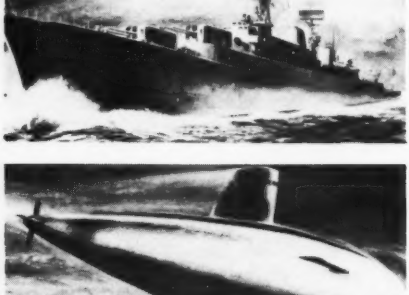
GREAT BRITAIN

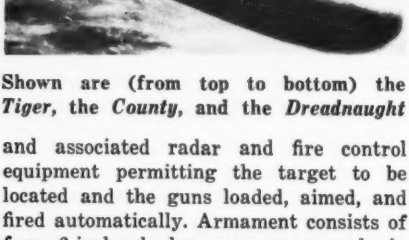
Warships of the Future

New vessels under construction for the British Navy include four *Tiger* class cruisers, three *County* class destroyers, and the nuclear submarine *Dreadnaught*.

The *Tiger*, first of her class, is planned for completion early in 1959. The 555-foot-long vessel which will displace 11,700 tons fully loaded, will be equipped with turrets







Shown are (from top to bottom) the *Tiger*, the *County*, and the *Dreadnaught*

and associated radar and fire control equipment permitting the target to be located and the guns loaded, aimed, and fired automatically. Armament consists of four 6-inch, dual-purpose guns and six 3-inch antiaircraft guns, all of which are said to have an extremely high rate of fire.

The *County* class destroyers will be named *Devonshire*, *Hampshire*, *Kent*, and *London*. These vessels will displace 5,500 tons fully loaded and will be capable of a speed of about 32.5 knots. They are designed to operate in "fallout" areas, and will use a combination of steam and gas turbine propulsion plants. In addition to a heavy complement of conventional weapons, the *County* class vessels will be armed with the *Seaslug* surface-to-air guided weapon. The first two of these destroyers are planned for delivery in 1961-62.

The nuclear-powered submarine *Dreadnaught* (MR, Jan 1959, p 80) is to have a whale-shape hull and fin like conning tower for maximum underwater efficiency, high speed, and long endurance. It is scheduled for completion in 1961.—News item.

'Firestreak' Data

The *Firestreak* infrared homing air-to-air missile has been revealed as having a range of up to four miles, depending on the closing speed of launching aircraft and its target, and the altitude and type of target. The weapon, which carries either a contact or a proximity fuze, will intercept supersonic as well as subsonic aircraft even when fired from dead astern of the target.

An advanced version of the *Firestreak* is under development for the interception of aircraft in the Mach 2 class. The *Firestreak*, a solid propellant rocket 10 feet long and less than a foot in diameter, is carried by the British *P.1B*, *Javelin*, and *Sea Vixen* interceptor aircraft.—News item.

Transverse Propulsion

Now under construction and planned for completion in 1960, the 40,000-ton liner *Oriana* will be fitted with transverse propulsion that will enable the vessel to move

sideways. The system consists of propeller assemblies mounted in tubes arranged across and through the hull of the vessel below the waterline. Both bow and stern installations comprise two units which can be operated singly or together. All four units can be remotely controlled from the bridge. It is expected that this arrangement will permit the *Oriana* to come into a berthing position parallel to the dock and move in to the dock sideways under full control.—News item.

Nuclear Powerplants

By 1965 Great Britain plans to be producing about 6,000 megawatts of industrial electricity from generator stations using uranium, gas-cooled reactors for power. This will be double that of the other six nations in the Euratom plan. Ten new plants are to be built including one in northern Ireland. Four of these are now under construction. The first reactor to be employed in the production of commercial electricity was the plant located at Calder Hall, England (MR, Nov 1956, p 79).—News item.

WEST GERMANY

Arms Curb Eased

By unanimous decision of the Western European Union members, West Germany has received permission to manufacture a short-range antitank rocket designed by German engineers, and to construct a naval training ship of greater displacement than the 3,000-ton limit previously set. West Germany also has requested permission to make naval mines, submarines larger than the present 350-ton limit, and antiaircraft missiles.

Other progress in armed forces development of West German forces includes a reduction of the planned over-all strength from 500,000 to 312,000 men, a tentative plan to purchase six to 10 *F-104 Starfighters* and build 300 more in West Germany, and the purchase of 50 *Italian G-91* fighter bombers.—News item.

FRANCE

Mach 2 Aircraft

Three prototype and preproduction series French aircraft have demonstrated speeds in the Mach 2 class. They are the *Mirage III*, the *Griffon*, and the *SO.9050 Trident*.

The *Mirage III* (MR, Aug 1958, p 73) achieved a speed of Mach 2 in a test using only its 13,000-pound thrust *Atar 9* engine. The aircraft also is equipped with a *SEPR* rocket unit that is expected to give it a considerably higher speed. The *Mirage III* is a delta-wing, all-weather interceptor capable of utilizing short

***Griffon* ramjet-powered interceptor**

makeshift runways of about one-half mile in length.

The *Griffon* is a ramjet-powered experimental aircraft that is equipped with an *Atar* turbojet engine to bring it up to speed so that the ramjet can operate. This aircraft has reached a speed of Mach 2.05 in recent tests. A unique feature of the *Griffon* is a forward trimming plane which gives it a tail-first appearance.

The *Trident II*, an experimental rocket and turbojet-powered aircraft, has attained a speed of Mach 1.97 using both its wingtip-mounted turbojet engines and its rocket motor.—News item.

HUNGARY

Icebreakers Built

Hungary is to build a fleet of 11 icebreakers for use on the Danube River. The fleet of icebreakers is expected to be completed in 1965. Icebreaking on the Danube is now accomplished by vessels converted into temporary icebreakers.—News item.

CANADA

British Helicopter Shown

Great Britain's Fairey *Ultra Light* helicopter has been demonstrated for the Royal Canadian Army, Navy, and Air Force. For the army demonstrations, the helicopter was equipped for casualty evacuation as an air ambulance. For the navy, it demonstrated successfully its ability to take off and land on a tiny platform on the stern of a frigate. The *Ultra Light* helicopter is powered by pressure jet units mounted on the tips of the two-blade rotor.

The Fairey *Ultra Light* helicopter

Compressed air for the jets is supplied by a *Palouste* gas turbine generator mounted to the rear and below the aircraft's two-place cabin. It can attain a maximum speed of 98 miles an hour and has a top payload of 640 pounds.—News item.

'Lacrosse' Adopted

The *Lacrosse* surface-to-surface guided missile has been adopted by the Canadian Army as a standard tactical weapon. The first Canadian *Lacrosse* battery of four launchers will be split. Half will be deployed with the Canadian Brigade Group in West Germany and the other half will be used for training at the Canadian Artillery School in Manitoba. The *Lacrosse*, which has a range of 20 miles and a speed of Mach 2, is 19.5 feet long and weighs slightly over 2,500 pounds. It is propelled by a solid rocket motor. All elements of the system, including the launcher, are mounted on mobile carriers, and most of it is air-transportable by army aircraft. After being launched from a position in the rear of the combat area, the *Lacrosse* is guided to its target by a forward observer. Because of its extreme accuracy and high payload, the missile is said to provide one-shot destruction of difficult targets, such as pillboxes.—News item.

ARGENTINA

'Paris' Aircraft Tested

The first *MS 760 Paris* jet aircraft assembled in Argentina has been completed and tested. The Argentinian Government has ordered 48 of the armed versions of the *Paris* which are shipped from France in component form and assembled at the Argentine Cordoba installation.

The armament of the aircraft includes four 7.62-mm machineguns. The *Paris*

Argentine-assembled *MS 760 Paris*

also can carry from 12 to 14 rockets, six 110-pound bombs, or two 250-pound bombs. The versatile *Paris* is propelled by two *Turbomeca Marbore II* turbojet engines of 880 pounds thrust each and achieves a maximum speed of 405 miles an hour.—News item.

DENMARK

'Nike' Training

More than 100 Danish soldiers are training at the United States Air Defense Center at Fort Bliss, Texas, in a seven-month course in the handling of *Nike Hercules* antiaircraft missiles.—News item.

MILITARY DIGESTS

Airpower for the Atomic Age Army

Digested by the MILITARY REVIEW from a copyrighted article by Robert R. Rodwell in "Aeronautics" (Great Britain) June 1958.

MOBILITY is invaluable in warfare. It allows firepower to be concentrated rapidly. It offers a commander the opportunity to choose the location of an engagement. It permits surprise. It allows evasions. It can exhaust and mislead the enemy.

Human feet have long since given way to cavalry, and cavalry, in its turn, to mechanized vehicles. Of mechanical vehicles, aircraft are the most highly developed examples and the least limited in operation. Until recently aircraft have been limited in that they have been dependent on ground installations. Now with the knowledge of vertical takeoff techniques, whether by jet lift, rotary wings, boundary layer control, or by jet flaps, a new era of flight is opening in which aircraft will become far less dependent on fixed facilities. Unparalleled flexibility of operation is in sight.

A proper recognition of the relation of airpower to land warfare demands a more catholic approach to aviation by the higher command of the army than has been evident up to the present. There are few indications that those who direct the army's affairs have any real appreciation of the army's vital need for aviation. If they are unaware of the need, it is incumbent upon those who are aware of the potentialities of specialized army aerodynes to make their awareness known and to press for intensive research, development, and adoption. In this context we fear that the British Royal Air Force is not exerting as much influence as it should, or proffering all the advice that it rightly could give.

Air Force Role

The situation is understandable, if not excusable. The Royal Air Force is preoccupied with its major role which is to mount the deterrent against nuclear aggression and to defend its bases for a sufficient period to enable retribution to be delivered if the deterrent itself fails. It is a role that is peculiarly an air service role, and, as such, a role exclusively the province of the RAF. However, its importance must not inhibit the RAF in giving full attention to the ways in which it can assist the army in fulfilling the land warfare commitments.

It is believed that major nuclear war is unlikely to happen for a long time, if at all, providing the joint British-American deterrent forces are maintained in being. Such a war would be as disastrous to the Soviets as it would be to the Western Nations. Soviet aims are being furthered in many parts of the world without resort to major war. Almost every week the British Army is engaged somewhere in a local action which is directly, or indirectly, inspired by Soviet influence.

Already the influence of Britain has been weakened severely in the Middle East, and her interests appropriated or threatened.

As her influence is weakened there is a correspondingly greater need for *independent* aerial mobility to ensure that the army is delivered to the short-lived outbreaks and the running sores throughout the globe as each emergency arises. There is a drastic need for transport aircraft in excess of those we already have—exceeding them in numbers and performance. The development of strategic transports will give added strength to the deterrent forces as well, for it will enable them to be deployed on short notice to distant and dispersed points around the globe. This consideration will be important particularly when the missile deterrent, which lacks its own mobility, supersedes the manned aircraft deterrent that has organic mobility.

The Army's Needs

Primarily, air transport is the concern of the army; certainly at the present time its needs are greater than those of the Royal Air Force, and its needs will remain greater. We have argued that RAF support of the army's interests is insufficient, particularly at the planning level. The situation calls for the establishment of joint air transport estimates which would emphasize that strategic transport is not entirely an RAF affair. The RAF, by virtue of its aviation experience, must remain the operating agency of this country's military transport arm, but so long as air transport is related directly to RAF planning it will tend to remain modeled to the RAF's own domestic requirements. The army's needs will be inclined to remain subordinated to those of the RAF, when in actual practice they may be more urgent and vaster in scale.

In fields closer to the actual ground fighting than the initial transportation of the troops to the location of the engagement, there is room for a far quicker adoption of the concept of three-dimensional warfare than that discernible in the present plans. One could recommend that the War Office should make a close examination of the way in which foreign armies are embracing aircraft as an integral instrument in the ground conflict.

The United States Viewpoint

It can be invidious to compare United States practice and British practice, but in this instance we believe that the comparison must be made. The United States Army has organic aircraft capable of fulfilling a very wide range of duties, and the range of duties is being expanded constantly. Nearly 5,000 aircraft are operated by it directly. The United States Army thinking is spreading beyond the bounds of tactical transport, reconnaissance, liaison, and casualty evacuation; organic army attack aircraft—operating as it were as armored fighting vehicles of the air—are being developed. Such expansion is not "empire building"—it is not preempting the roles of the United States Air Force. It is evidence of a full appreciation of the need for aircraft in the land conflict. Full use is being made of VTOL techniques in these new projects; the number of VTOL aircraft under development by the US Army runs into double figures.

Such prodigality may be very uneconomical; it is the kind of extravagance this country has no prospect of affording. But by intelligent planning, allied to a full conception of the uses for these aircraft, the industry in this country could produce—in far fewer programs—a range of aircraft that would enable the army to meet its tasks in a manner and with an efficiency befitting the age.

Restrictions

A political handicap restricts the army to operating aircraft with an all-up weight of only 4,000 pounds. This limit we believe to be completely unrealistic, for it prevents the development of aircraft suited specifically to army needs which must be

above this weight limit. There is a need for short-range VTOL tactical transports that should be operated as an organic part of the army's frontline vehicles. These aircraft would give forward area mobility, independent of ground features, which would enable smaller forces to fulfill bigger missions. There is a need for aircraft tailored specifically to the needs of various arms—for heavy lift helicopters which would serve the engineers in bridging operations, and give the armored forces greater potency of operation in lifting their vehicles over natural obstacles and over long distances.

US Army Photograph

Army-controlled helicopters are a vital element of ground mobility

Such aircraft have no direct application to the RAF's need, and so long as the army cannot take responsibility for them the RAF is unlikely to urge their development. The US Army was handicapped originally by artificial limits, although these were higher than those imposed on the British Army Air Corps.

There is a need for a peculiarly army armored strike aircraft. Ideally, these should have VTOL capabilities conferred either by jet lift or ducted fans. Fighter development is inexorably moving away from the requirements of close support for ground forces as the speed and altitude of potential attacking aircraft endlessly increase.

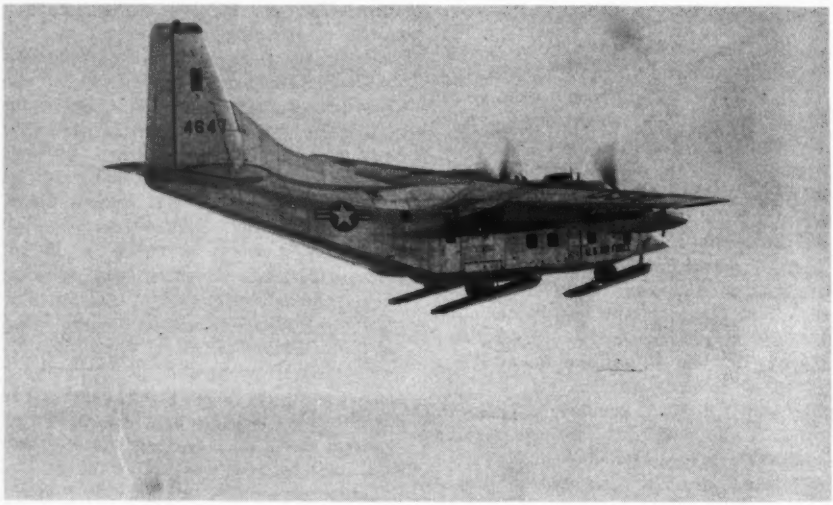
The interceptors the RAF should have to fulfill its aerial defense role have no application in a distant colonial or protectorate conflict in which the army is likely to find itself engaged. In these conflicts it would have complete mastery of the air; it should have the aircraft to exploit that mastery, and they should be operated by units forming an integral part of the army. It is my belief that the

aerial armored fighting vehicle is as valid a concept as the ground armored fighting vehicle. It has many advantages, the greatest being that its freedom of movement confers upon it greater invulnerability to enemy attack.

Implicit in the widespread adoption of the concept of army airpower is a change of attitude toward aircraft generally. They must be regarded essentially as just another range of vehicles, vehicles adaptable to an even vaster range of duties than that to which the original motor vehicle has been adapted.

There is a prevalent attitude that aircraft are special articles in their own right, and, as such, demand a special service for their utilization. We feel this attitude is manifestly wrong. It ignores history.

The evolution of the internal combustion engine gave rise to motor vehicles which were a distinct improvement on the horse (although this fact, we are assured by our elders, was denied vehemently for many years by the ruling military chiefs of the time). If the attitude that the new vehicles justified a special service for their operation had been taken then, their use by the army would have been very much delayed. That is what has happened with regard to aerial vehicles. *There is no justification for regarding the specialized army aircraft to be anybody's pigeon but the army's.*



Assault aircraft, such as the United States *C-123*, are needed in large numbers to meet the Army's mobility requirements

Corrective Measures

The army itself must urge that the restrictions which inhibit its embrace of aviation be lifted, but such pressure is unlikely to come from the present higher levels of the army, where there seems little interest or knowledge of modern airpower. An indication of the tentative way in which the War Office is playing with organic aviation is the regulation which insists that army pilots must return to their parent regiments after a three-year

tour with the Army Air Corps, and only after completing two or three years on ground duties can they apply for a second flying tour. Thus officers who acquire practical experience of what aircraft can mean to the army and who develop an enthusiasm for aviation, suddenly find themselves cut off from close contact with it. There should be opportunities for men to make a *career of army aviation.* Their enthusiasm should not be lost and frustrated.

There are peeople in the army who have a conception of the tremendous increases in fighting efficiency aircraft can confer, and they are enthusiasts for the air armed army. But until these officers rise to senior rank, or impress their doctrines on those who hold the reins, airpower and the army will not reach the union which is proper to them.

The Soviet Espionage System in Germany

Translated and digested by the MILITARY REVIEW from an article by Johann Kurt Klein in "Truppenpraxis" (Germany) February 1958.

BASICALLY, the Soviet attitude toward espionage is different from that of non-Communist states. The primary task of Western intelligence services is to gain information about plans and intentions of hostile powers in order to protect the democratic state and its population from detrimental influences. Soviet espionage is a constituent part of Communist world policy working now as ever toward world revolution. Spy activity is aimed at this "final strategic goal" just as are Soviet diplomacy, economy, preparations for war, and interior policy.

Since the revolution of 1917, the Soviet system has implemented aggression in all directions by all available means. The driving force behind this movement lies in the philosophy of "dialectical materialism," and the theory of strategy and tactics developed by Lenin.

Soviet espionage attains the following features which must be considered by the West:

1. Soviet espionage primarily serves the preparation of the world revolution. Its most important goal is to undermine and destroy non-Communist forms of society. The intelligence service represents just one means to this end.

2. In addition, Soviet espionage has an additional psychological task—to intimidate and to disseminate fear in order to paralyze the forces of resistance and defense in non-Communist forms of society.

3. Soviet espionage typically expresses the suspicion of the Soviet system toward the free world.

4. The organization of Soviet espionage is based upon a very extensive apparatus, far bigger than the total intelligence services of the entire free world. At present this organization may be outlined as follows:

a. Almost 50 Soviet embassies, legations, and diplomatic agencies in the world carry out espionage assignments.

b. In the free world, 53 Communist parties, following Soviet directions, work for world revolution and do espionage to an extent which cannot be overlooked.

c. Hundreds of single organizations, independent of Communist parties and Soviet foreign agencies, work under Soviet directions in the fields of espionage, sabotage, disintegration, and terror.

d. Thousands of single agents are scattered over the free world, part of them occupying key positions in politics, the military forces, and the economy and sciences of many nations.

e. The Soviet satellite countries main-

tain their own diplomatic agencies, Party contacts, single organizations, and single agents all over the world. Their espionage work is guided and evaluated by the espionage center in Moscow. Today, the top leadership of Soviet espionage is marked by an exaggerated trend to centralize.

Moscow Offices

In the years of Stalin's leadership, three offices in Moscow dealt with the espionage and intelligence services inside and outside the Soviet sphere of influence. There was a certain amount of competition between them. Since March 1946 approximately the following division of authority has been in effect:

1. *MVD* (*Ministerstvo Vnutrennikh Del*) Department of the Interior: responsible for the security inside the Soviet sphere of power, and for the maintenance of the slave camps. It has its own ground and air forces.

2. *MGB (Ministerstvo Gosudarstvennoi Bezopasnosti)* Department of State Security: assigned fields of operation are espionage, counterespionage, disintegration, sabotage, and terror activities.

3. *MGK (Ministerstvo Gosudarstvennoi Kontrolja)* Department of State Control: full authority and inspection rights within the entire Soviet governmental "apparatus" and its strong bases in foreign countries.

After Stalin's death, Beria succeeded in making the *MGB* a main part of his *MVD*. Two months after Beria was executed on 13 March 1954, the State Security Service became independent again and, as the *Komitet Gosudarstvennoi Bezopasnosti* (*KGB*), was controlled by the Cabinet Council of the USSR, at that time under Malenkov.

General Ivan Sserov became chief of the *KGB*. For a short time the *MGK* was taken over by Molotov after he had been relieved from his position as Minister of Foreign Affairs. Before that, this office presumably lost a substantial part of its authority. After Molotov had been fired, the *MGK* was dissolved in August 1957, resulting in a stronger concentration of intelligence activity in the hands of the *KGB*.

The Soviet Zone of Germany

The *SSD* (*Staatssicherheitsdienst*—State Security Service) in the Soviet-occupied zone of Germany is a servile tool in the hands of Moscow, as are the State Security Services of Czechoslovakia (*STB*), Bulgaria (*DC*), Romania (*Singranza*), Hungary (*AVO*), and Albania (*MP*).

The Department of State Security (*MfS*) (*Ministerium fuer Staatssicherheit*) in the Soviet zone, employing a permanent staff of 50,000 people, recently reorganized in accordance with Soviet instructions. It is subordinate to the Cabinet Council, *Deutsche Demokratische Republik*, a member of which is the Minister for State Security, Erich Mielke. The Security Commission of the Central Committee of the German Socialist Unity Party with its 25 members controls the Department of State Security and is bound to the directions of Ulbricht, Secretary General of the Party. Furthermore, all measures have to be approved by a Soviet "advisor" who belongs to the leading figures in the *KGB*.

Within their organization, the Department for State Security has so-called administrative and operative branches. There are three administrative divisions: Personnel and Training, Post and Carrier Affairs, and Economy. Of the 19 main operative divisions, those which extend their activity into West Germany are:

1. *"Border" operative group.* This group controls the traffic of agents, information, and materials across the interzonal boundary. Theoretically a part of *Nationale Volksarmee*, this group is subordinated directly to the Secretary of State.

2. *Espionage and counterespionage.* This main division has eight sections: the American, British, and French lines; Federal Intelligence Service; Federal Office

for the Protection of the Constitution; *RIAS* (a Communist radio station in Berlin); *NTS*; and *ZOPE* (the latter two are known to exist but have not been positively identified).

3. *Industry.* Among the five sections of this activity, one section has the task of using former business company ties between East and West Germany for espionage.

4. *Underground activities.* This main division has six sections which maintain secret informants, secret collaborators, and contact apartments in West Germany.

5. *Preventative security measures—armaments industry.* This section also works in both parts of Germany.

6. *Espionage and infiltration in mass organizations and economic institutions.* A big part of the infiltration efforts in West German labor unions and economic organizations originates from this section.

7. *Espionage and infiltration in the West German armed forces, and in the government and administrative offices of the West German Federal Republic.*

8. *Personal security.* This division is the control center of an organization of dependable agents who protect the Communist Party brass in the Soviet zone as well as in West Germany, and who must be able to abduct or do away with them, if necessary.

Secret Organizations

The secret Communist underground organizations are the creation of the Second World Congress of the Third Communist International (Comintern) which in July and August 1920 instructed all Communist parties to build up organizations independent of the legal party organization. According to the rules of the Soviet *Konspirazia*, no member of the Communist Party, known as such in public, was allowed to work in the underground organizations. The National-Socialist counterintelligence dissolved these organizations within a few years.

After World War II, Walter Ulbricht assigned Gustav Mayer to check on the surviving Communist underground organization members. First they found a Preparative Commission, later camouflaged as the Service in Search of Missing Persons. Extensively supported by the Allied occupation and German civil authorities, this service worked all over West Germany and reestablished the Communist underground organizations in the first years after the war. The partition of Germany enabled the establishment of a control of the entire system of apparatus from the Soviet zone.

The fundamental scheme of the Communist underground featured the following organizations:

1. *The MP Organization* has been built up as the cadre and leaders of the future German revolutionary army, representing a kind of general staff in the event of revolution. Corresponding to the military regions of the German Reich, there were six MP superior commands headed by German Communists and Soviet generals. MP superior commanders were, among others, Wilhelm Zaisser, Albert Schreiner, Joseph Gutsche, Artur Jllner, and Oskar Muller, delegate of the Communist Party to the German *Bundestag*.

2. *The M Organization* is a natural and logical supplement to the MP Organization, and would carry out military actions in case of revolution.

3. *The N or Intelligence Organization* had the task to provide information and in case of revolution, to establish and maintain intercommunication lines.

4. *The T or Terror Organization* went into action several times during the time of the Weimar Republic. Its tasks include acts of terror, sabotage, and outrage.

These organizations have had their ups and downs and their efficiency has varied widely, but their degree of dangerousness for the constitutional Weimar State in the post-World War I period was unquestionably high.

Conclusions

There is no doubt about the Communist underground organizations being in action again in the German Federal Republic. The ban on the *KPD* (*Kommunistische Partei Deutschlands*) hardly influenced their development since there is a strict separation of legal party activity and underground organization activity. The proximity of the intrazonal boundary, many opportunities to be found in proponents of radical views, and the tolerance of a constitutional democratic state make the work for the Communist underground organizations considerably easier than it was in the past.

Besides the big organizations mentioned above, there were several special organizations working in the Communist underground before World War II, for instance the so-called "two girls"—the two Soviet Russian organizations called *Klara* (espionage for the Red Army) and *Greta* (espionage for the *GPU*). There is no doubt about their present activity in the German Federal Republic after what has become known in recent espionage cases.

In summary, we can say: It is very likely that the always versatile and extensive activity of Communist underground organizations is more intense today than at the time of the Weimar Republic.

Changes in Warfare of the 19th Century

Digested by the MILITARY REVIEW from an article by Captain D. Dingle in "An Cosantóir" (Ireland) January 1958.

THE Battle of Waterloo not only brought the final defeat of Napoleon, but served to mark the beginning of the industrial age in war. Before this, war had been a confined affair touching a comparatively small proportion of the population, but the Industrial Revolution was to provide the means of mass troop transportation and vastly superior weapons of destruction. Steam as a source of motive power was about to transform the movement and supply of armies completely.

Since Alexander the Great, the first of the great captains, had faced the Persians to the time that Napoleon, the last of them, met his defeat, armies had moved in the same manner—on foot. Only in the dawn of the Industrial Revolution was the great breakthrough possible.

Advent of Steam

When Stevenson built his first railroad from Stockton to Darlington in 1825 he scarcely could have realized that he was launching the era of railway wars. The significance of the railway as an adjunct to war was appreciated first by the Prussians.

Friedrich List saw that the railway could transform Prussia from a position of weakness hemmed in by enemies to a very powerful one. He foresaw that the railway made the speedy mobilization and movement of troops possible, and that Prussia also would enjoy the advantage of operating on interior lines of communications. Largely as a result of his efforts, a system of railways—almost as it exists today—was laid down. In 1846 an ominous "first" for the rest of Europe was recorded when a complete army corps of 12,000 men with all its equipment, horses, and guns was transported from Berlin to Krakow.

The first of what might be termed the "railway wars" was the American Civil War, one of the most significant features of which was the manner in which the North and South contended for control of the railways. Battles were fought for the possession of railway junctions; they were fought along railways and fought to cut

railways. When the railway junction at Chattanooga fell in December 1863, the South lost possession of its only east-west line, which was to prove a mortal blow.

Although the South enjoyed the benefits of interior communications, it lacked the industrial power to make good its losses in rolling stock and tracks.

The most bizarre incident of the war was provided by the railway when a northern spy stole a train in an attempt to block the line from Georgia to Chattanooga —an episode enshrined in the film "The Great Locomotive Chase."

The Steam Turbine

At sea, too, steam was exercising a profound influence on war. Although he did not live to see it fully realized, Napoleon at least envisaged it. In fact he wrote: "The project of moving ships by steam is one that may change the face of the world."

The first steam warship made its appearance in 1814, a product of the fertile brain of Robert Fulton. Like most "firsts" it was a cumbersome affair and had for its "armor" a belt of timber 58 inches thick. Although it was held by many competent authorities, notably Congreve, that this armor would not suffice, it was not until after the Crimean War that the first ironclad ship was laid down.

When Britain built the *Warrior*, she laid the foundation on which her naval power was to be based. Strangely enough, the tradition of sail died hard and it was not until 1869 that the first steam warship, which also was not fully rigged, appeared.*

Rifled Cannon

Side by side with the development of the battleship was the development of the rifled cannon. Although both breech-loading and rifling were known separately, they had never been brought together in the one weapon before 1845. The cost of producing such weapons was prohibitive, however, and it required the impetus of war itself to bring them into production.

Their appearance in the Crimea made the bombardment of Sevastopol, in the words of an observer, "a hideous thing."

The resultant improvement in range and accuracy touched off a progression in ship's armor-plating as a defensive measure. In the 10 years following the Crimean War plating advanced from four and one-half inches to three times that in thickness.

The influence of rifled cannon on land warfare was even more marked. The American Civil War, and later the Franco-Prussian War, proved that with this improved form of cannon, artillery had become the predominant arm. Massed artillery drove the cavalry from the field of battle forever and wrenched from massed infantry attacks the power to reach a decision.

Although these developments had been foreshadowed in 1864, when World War I broke out in 1914 most military thinkers believed that massed infantry could still achieve a victory. It took four years in the mud pits of Flanders to convince them that this was no longer true.

Breech-Loading Rifle

In the field of small arms, too, the 19th century saw great advances. The invention of the percussion cap and cylindro-conoidal bullet led to the development of the breech-loading rifle. In 1841 the Prussians issued the first of these weapons to their infantry.

It not only had the advantages of rapid loading and long range, but it could be reloaded in the prone position. This bestowed a great advantage on the defense, especially if it were entrenched.

Out of the combination of artillery and earthworks grew the maxim that it takes at least three to one to overcome a defensive position—an opinion freely expressed after the American Civil War. Thus we find such statements as:

* The author disregards the ironclads of the Civil War era, that is, the *Monitor* and *Merrimac*.—Editor.

"Put a man in a hole and a good battery on a hill behind him and he will beat off three times his number even if he is not a good soldier" and "The ordinary enlisted men assert that one good man behind an earthwork is worth three outside it."

The Rocket

The early 19th century saw the introduction to Europe of the rocket as a weapon of war. For centuries it had been used in the East which was where Sir William Congreve first got the idea. The first ballistic missiles were fired into Boulogne in 1806. True, these were crude affairs and hopelessly inaccurate but they caused a great deal of damage and terror.

The inventor saw far beyond his time when he said: "The rocket is, in truth, the arm by which the whole system of military tactics is destined to be changed."

Total War

The return to the tactics of Genghis Khan and Tamerlane that seems imminent today also was evident in the last century.

The tactics of Sherman in his march through Georgia was the first manifestation of total war and also the principal cause of the residual bitterness of the Civil War. They were to earn him the title "Attila of the American Continent." As he wrote:

The utter destruction of its [Georgia's] roads, houses, and people will cripple their military resources. . . . If the people raise a howl against my barbarity and cruelty, I shall answer that war is war . . . we will make old and young, rich and poor feel the hard hand of war.

Although they felt it to the extent of 100 million dollars, only 20 percent of it actually was to our advantage, "the remainder was simple waste and destruction."

Grant, too, subscribed to the strategy of weight and endurance:

I am determined to hammer at my enemy and his resources continually until by mere attrition, if by no other means, there is nothing left for him but submission.

The fulfillment of "war by mere attrition" was to reach its climax in the next century.

The Staff System

In the 19th century the actual direction of war underwent a radical change. In the days before conscript armies it was possible for one man to control and direct an army; the mass armies now made possible were beyond such unified control. Because of this the general staff system was born.

Bad staff work had cost Napoleon dearly —the Prussians saw to it that the same would not happen to them. As List foresaw the value of the railway, Scharnhorst recognized the need for an efficient central command. The general staff as envisaged by him and developed by his successors was, to a large degree, responsible for their victory in 1870.

The efficient Prussian planning before the war resulted in clockwork proficiency when it started; this was all the more evident by contrast with the chaos on the French side where nothing had been arranged.

One French general reported bitterly that:

In the supply depots there were no camp kettles, dishes, or stoves; no preparations to get the wounded away, no ambulances. If our roads are littered with stragglers dying of hunger, it is the administration which is to blame . . . an order to blow up a bridge could not be carried out because no powder could be found in the whole army corps.

This preplanning, however, did not sacrifice the principle of flexibility, but rather emphasized it. The fact that command—supreme command—was no longer so personal, left the field commander with wider scope in implementing the general plan.

In his memoirs Von Moltke wrote:

The method by which our plan was to be accomplished was left to the decision of the hour; the advance to the frontier alone was decided on in every detail.

Internal Combustion

The latter end of the 19th century produced a number of inventions which, like the steam engine—although not warlike in themselves—were to exercise a profound influence on war. Pride of place must go to the internal combustion engine whose invention paved the way for the return of the "cavalry" to the field of battle. True, it would have to readopt the armor of the ancient knight but it could now resume its previous importance and revolutionize war.

The internal combustion engine also provided the power which made flight possible in the next century and brought war into a completely new dimension. It is one of the inevitable tragedies of history that such an advance in motive power should have brought such ruin and destruction in its wake a half-century later.

The Telegraph

The time factor and lag in the delivery of orders, in the past, had often cost decision on the field of battle. This was radically altered by the invention of the automatic telegraph. Widely used in the American Civil War, it still did not solve the problem entirely. Telegraphed messages were liable to misinterpretation and, worse still, lines could be cut. Something more was needed, and in 1897 Marconi provided it when he transmitted a message over nine miles by radio and, four years later, across the Atlantic. This was the dot and dash which would grow into the bleep-bleep of the *Sputniks*.

Conclusion

The scientific, technical, and military advances of the 19th century changed the character of war from a closed shop to an open slaughterhouse.

When the century began, the Industrial Revolution was only in its infancy; industry and the civil population, remote from the battlefield, were only beginning to forge the tools of destruction. When it closed, the wheel had turned full circle; the embryo of the monster that would attack and destroy industry and the civil population themselves had emerged.

The Polish economist, Bloch, glimpsed it in 1897:

The future of war is not fighting but famine, not the slaying of men but the bankruptcy of nations and the breakup of the whole social organization.

My view is that we should embark on a 'Five Point Program' to improve the capabilities of the Army and our sister services to meet the possible challenges posed by limited war. The salient points of this program are: (1) the modernization of appropriate equipment; (2) the improved strategic mobility of limited war forces; (3) the preplanned use of air and sealift; (4) expanded joint planning and training; and (5) the publicizing of our limited war strength once it is reality.

General Maxwell D. Taylor

Tactical Implications of the Human Factors in Warfare

Digested by the MILITARY REVIEW from an article by Major J. O. Langtry in the "Australian Army Journal" April 1958.

Human nature is the one constant not transformable through the reiteration of 'doctrine.' We may find a better way to use men's powers through heavier ordeal. But we will not change cockroaches into butterflies. Our basic subject is man. All advance depends on knowing him better as a fighting animal, in the mass and under pressure, a highly sensitive, tough, yet fragile vessel, with definable limits.

Brigadier General S. L. A. Marshall, *United States Army Reserve*

ANY experienced leader of men in battle has learned a good deal concerning human behavior under stress. In recent wars, World War II and Korea particularly, the trained psychologist also has had opportunity to carry out studies of the battlefield. Many of the gaps in knowledge of the "definable limits" of man under pressure have been closed. The question is—have we made the best use of this knowledge? Has the full scope of application in the military field been appreciated?

Background

Recent history has shown that the hot war may never eventuate in our time. Nevertheless, at this moment differences between sovereign states are being settled on battlefields by men at arms. The wars of attrition which have been continuous since Korea seem to be regarded as something less than hot war—a limited extension of the cold war process. Nonetheless, they are wars in which the tactics, particularly the minor tactics, are conventional by World War II standards. The outcome of these conflicts has not always been decisively in our favor, at least militarily. This lends emphasis to a need to examine the technique of employment of our limited manpower in battle. Perhaps more than ever before, success in local engagements will depend upon successful employment of the individual soldier, especially the infantryman, and for this we need to understand his makeup.

Even considering the significance of pushbutton warfare, the implications of which are often grossly exaggerated, the functions and responsibilities of the infantry soldier will remain unchanged. The advent of new weapons and concepts of war will place increasing stress on the individual infantryman, and will necessitate a detailed study of his psychological, physiological, and spiritual makeup to ensure that he is employed correctly and efficiently. According to General S. L. A. Marshall:

It is only through an understanding of the elementary truth that a fighter's day has well-defined mortal limits that we achieve that enlightened usage of him which lifts his heart and exalts his spirit.

This is true whatever the nature of war, be it guerrilla or atomic.

Minor Tactics

To date, relatively little consideration has been given to the application of psychology to military minor tactics and training. There have been some notable exceptions in both the German and British Armies; Commandos, special type regiments, and sabotage teams developed special tactics to capitalize on predicted human emotional reaction. Skorzeny (German), Stirling (British), and others based many of their tactical plans for individual raids on the principle "that once real dis-

order is created almost anyone can get away with anything."

Much of Skorzeny's alarming success was based on his, in some cases intuitive, appreciation of the human frailties of the opposition and a clear understanding of the quality and capacity of his own troops. One of his axioms was:

Ask for volunteers for dangerous work. Pick out the best, train them in fellowship. Then they will develop qualities that no one has ever suspected them to possess.

These special qualities are not restricted completely to special groups of men. To some extent they are inherent in all men.

Special units are remarkable more for the achievements of the group as a whole rather than extraordinary qualities inherent in the individual members. However, almost any unit of infantry should be capable of emulating the characteristics of special units. They will need suitable leaders with an adequate knowledge of man, improved training techniques, the right weapons so that the man-weapon combination is a unified system with optimum fire effect, and adopt a similar approach to minor tactics to accomplish this. At the very least, conventional infantry ability would be enhanced considerably.

Perhaps Field Marshal Slim had this in mind when he remarked:

The level of initiative, individual training, and weapon skill required in, say, a commando is admirable; what is not admirable is that it should be confined to a few small units. Any well-trained infantry battalion should be able to do what a commando can do; in the Fourteenth Army they could and did.

It is the unsuspected good qualities as well as the hitherto concealed frailties of the common infantryman which must be brought into open forum discussion so that tactics, training methods, and weapon selection can be reviewed realistically.

A Fundamental Principle

Approximately 15 to 25 percent of the persons confronted with sudden danger can be expected to respond purposefully, quite rapidly developing sustained effective activity. These are best adjusted psychologically to develop immediate action. They are usually "too busy" to remember feeling subjective fear during the period of danger, but they may have a typical "let down" afterward.

The remainder and the majority of the groups confronted with the same immediate danger will be stunned and bewildered. There may be "instinctive" crouching and turning movements, but they will need an appreciable time to evaluate the situation. This very inhibition, due to the initial fear reaction, may set up a chain reaction which further delays the process of evaluation. However, in perhaps a matter of seconds, most persons will regain sufficient control to initiate some action—usually negative—toward self-preservation. Generally, this will take the form of flight or quick movement to a place of presumed safety.

From this position, although the immediate concern is usually for self-survival, social consciousness is reawakened in many persons and they are capable of positive unselfish action. If the unselfish action requires movement and is associated with general movement by other members of the group, fear is diminished or dissipated.

On the other hand, inaction is likely to intensify the fear reaction, thus increasing the chances of noneffective behavior. It follows that in the military sense we must endeavor to capitalize on such predictable enemy reactions to sudden danger, and at the same time develop techniques which will reduce the fear reaction and/or its consequences in our forces.

From the reaction to the situation described, a fundamental principle emerges:

In situations where the impact of danger is sudden and of personal concern,

especially at the section or platoon level, an immediate action (IA) drill is infinitely preferable to a more considered plan developed from a conventional appreciation.

Training for War

The war in Korea provides a good example for analysis. During the early stages of the "static" war, Australian troops encountered severe casualties on patrol at night when caught in ambush.

Initially, one specific problem was associated with "forcing" a Chinese ambush. The scene is a ricefield—a bare, flat landscape intersected by earthen embankments (paddy bunds). Almost inevitably a patrol would be caught by the Chinese as it passed near a bund. The Chinese force might number 15 or more, armed with a preponderance of automatic weapons ("burp" guns). The Chinese in ambush along the bund or behind it would hold their fire until the range was 10 to 15 yards.

The technique found to be most successful required the patrol immediately to turn into the enemy ambush and charge through behind the enemy to beyond grenade range. From this position, if circumstances were favorable, the enemy ambush was attacked from behind. The increased success resulting from this technique built up confidence, and, in time, the technique became standard policy throughout the Commonwealth division.

Having become a standard policy, a definite immediate action (IA) drill was laid down and included in the syllabus of training for reinforcements at the divisional battle school in Japan. It was here that great difficulty was encountered in putting over this particular technique. These troops, without any experience of war, were not impressed with a technique which called for them to "walk into" a well-concealed force, all firing fully automatic weapons from a position of great tactical advantage.

The IA drills for "action front," "action left," and so on were practiced, but it was apparent that the trainees had little or no confidence in the technique, despite the reassurance of instructors who had distinguished themselves in the Korean war. The instructional method was at fault.

A New Approach

Instructors responsible for training in patrolling techniques were encouraged by the school staff to adopt a new approach. The battle situation was to be described realistically and in detail. Then the fact of there being a natural, undisciplined reaction to run away was to be acknowledged. Usually this caused intensified interest in the squad; whereupon it was pointed out that in this case speed in getting out of the line of fire was the first essential in self-preservation.

By reexamining the actual situation in theory and on the training ground, it was demonstrated geometrically that the quickest way out of trouble was to pass directly through the enemy to a position immediately behind rather than attempt to follow the natural inclination to run away or bypass the ambush.

From this point on a change of attitude was marked. Necessary refinements to this aggressive and, at first glance, apparently foolhardy action were adopted eagerly. Assimilation was hastened and the required standard was achieved quicker and with less need for close supervision by forceful instructors. The method of instruction had been improved.

It was interesting to note that after the first sympathetic acknowledgment of fear, expressed as recognition of the desire to escape from the ambush being strong enough to override all other considerations in the mind of the novice, it was never mentioned again. At a very early stage the trainees adopted a tough, aggressive attitude, intimating that their penchant for executing this particular maneuver with such gusto was a reflection of their

attitude to war in general—an attitude of fearlessness in which they took pride.

The first point is established—certain training and instructional techniques, particularly those related to IA drills developed in combat as a result of experience, can be improved by an understanding of trainee attitude.

The second point is that, in a sense, the trainees were "conditioned" to an approved line of emotional reaction to the actual combat situation before joining their unit. Actual battle experience would still be necessary, but it is contended that the time necessary to gain the critical level of experience was foreshortened. This "conditioning" is best carried out at a battle school, because time may not permit adequate indoctrination "in the line."

The Counterambush Drill

Reexamining in more detail the actual maneuver as described above, it is clear that several specific psychological influences are present which influence human behavior to our advantage and to an extent that our chances of success will always be enhanced if the same technique is applied in similar situations.

First, the action of turning into the enemy—being concerted and involving movement—reinforces the emotion to an extent that an aggressive attitude is achieved. The emotion from the outset becomes positive with respect to the tactical aim.

However, had the IA drill called for withdrawal or bypassing, the activity likely is to have caused uncontrolled flight or panic. Had the IA drill called for "going to ground," the inactivity likely is to have caused reinforcement of the fear emotion to the extent that the group would become completely noneffective in the passive sense.

Second, the aggressive action and speed of mounting the charge generates a shock reaction in the enemy. This shock would not cause the enemy to cease the firing already begun, in fact, it might cause intensification of the activity of firing as reinforcement of the panicky emotion involved in fear. However, the shock would delay the reorganization necessary to counter the action of the ambushed once they had passed through those in ambush and had developed a threat from the rear.

Sufficient has been mentioned to show that the IA drill under discussion embodied psychological factors which strongly favored success. Since the principles involved are simple, it is suggested that similar IA drills lend themselves to analysis along the same lines in order to evaluate their effectiveness in battle.

This process of psychological "conditioning" coupled with sound leadership and discipline does much to improve operational efficiency quickly, although a series of exposures will still be necessary before the shock reaction to first combat is eradicated.

Linear Ambush Drills

A second example provides further illustration of the technique of improving minor tactics by exploiting known characteristics of human reaction to combat stress. Consider the case of the linear ambush, in particular the ambush as set in "close country" in daylight.

Theoretically, in terms of causing enemy casualties, the conventional method of execution should be much more successful than is frequently found to be the case in practice. This is exemplified even today in Malaya. The general technique adopted is to select 10 to 15 men armed with a preponderance of automatic weapons, including at least one light machinegun (LMG). They are concealed alongside a track at relatively close range.

The patrol commander usually stations himself near the LMG because his control over its fire is generally the key to any success they may have. However, once the initial burst of fire is over, the extent of

over-all success largely depends upon the part played by each of the other members of the team in ambush.

Those in ambush have the initiative and have the tactical advantage in that they are on ground of their own choosing. They are well-concealed and may even be dug in. The enemy walking into the ambush, particularly in forward areas, might be expecting trouble at any moment but not necessarily at this particular moment more than any other.

Consequently, with the first burst of fire an element of shock is achieved. The reaction of enemy troops initially is one of confusion. They will have difficulty in orienting themselves in relation to the location and extent of the ambush. In general the immediate reaction of those actually trapped in the ambush is self-centered on taking evasive action by getting out of sight.

If the enemy has the moral fiber and is well-trained and disciplined, there will be recovery from shock, after a period, leading to a return of fire and then the development of an assault against the ambush, should sufficient members still be available. This stage is a moment of concern for those in ambush.

They have not annihilated the enemy caught in ambush, and the enemy is regaining the initiative by attacking what is usually a disadvantageous position for defense against organized attack. The problem is to extricate the ambush party, and it is at this critical stage that casualties to the ambush party are most likely to occur.

World War II Methods

During World War II, among certain Australian units in New Guinea and Bougainville, the problem of disproportionate numbers of casualties in such situations caused grave concern. Further, despite numerous ambushes set with the purpose of taking prisoners, little success was achieved.

It was decided that failure was caused by neglect to capitalize fully on the shock reaction following the opening burst of fire, and remaining too long in the ambush site before breaking contact. The ambush drills were varied to incorporate the principle that, where layout permitted, the ambush party would assault the enemy immediately after the initial burst of fire from *all* weapons, wipe out the survivors in close combat and, should it be expedient, break clear by passing directly through the enemy and away. The entire operation, including the breakaway, could be completed in a matter of minutes—two or three at the most.

This procedure was adopted and the results were most encouraging. The percentage of kills and captures rose markedly, casualties to our own troops were greatly reduced, morale improved, and an unsuspected degree of aggressiveness emerged. In this enthusiastic state, seemingly impossibly large enemy parties were engaged by ambush parties of perhaps 10 or less. Generally, they were able to create havoc and make their getaway unscathed.

The technique described owes its success to a thorough understanding of what reaction surprise would cause in well-trained troops. Surprise results in a numbing of the mind. The duration and intensity vary with each individual, but even among fearless men (and they do exist) there always occurs a temporary state of helplessness. This situation, even though only momentarily existent, should be turned to good purpose. Having achieved surprise, every effort must be made to prolong the state of helplessness, especially helplessness of the group as an entity.

Should the surprised group be ably led, the leader will strive to make personal contact, regain control, and suppress the persistence of helplessness by initiating the customary IA drill. He will endeavor to prompt energetic action in the positive sense, tactically.

The initial burst of fire has caused surprise. Before there is time for orientation and the initiation of an IA counterattack those caught in ambush are assaulted at close quarters. The helplessness reaction is intensified and prolonged. Panic under these circumstances is often the final outcome.

Apart from these more obvious advantages associated with this technique, there remains a much less well-known but even more significant advantage. The coordinated group activity ensures maximum effort from the ambush party. Those in ambush actually are compromised to close with the enemy and fight most effectively for their lives.

That such an action should be advisable is based upon data available to the effect that, generally, a significant percentage of men in combat will fail to fire deliberately or fire noneffectively as a matter of choice.

Failure to Fire

There *are* fearless men, and these are best suited to war. That such men have an uplifting influence cannot be denied, but the fact remains that there are all too few fearless soldiers—certainly there are too few to enable a force to be recruited from the unafraid type alone. Tactics, training, and the design of weapons must be based on the capacity and qualities of ordinary people.

As former Major General Hans Kissel has said:

The ordinary human being shows his bravery by overcoming his fear by the power of his will.

The individual who is thus able to retain his inner equilibrium and the unimpeded use of his powers of reason is to be counted among the brave and to be considered the equal of the unafraid. The inborn instinct of the human being not to appear cowardly, his sense of duty toward his country, and his natural feelings of comradeship with its mutual aid in times of need and danger are the usual forces that sustain him. For those individuals who have limited willpower, discipline and fear of punishment sometimes serve as props to keep them in line.

If an actual or imagined danger suddenly arises, alarm may increase to fear, and fear to terror.

Depending on his subjective makeup, the individual who is overcome by terror becomes prey either to an incapacitation which makes him incapable of any action, or gives himself over to purely instinctive action whose objective is solely the preservation of his life.

It is this group of people with which we are here concerned.

American research teams in World War II and the Korean war studied closely the incidence of deliberate failure to fire. It is said that at least 75 percent of trained and experienced infantrymen fail to make use of their weapons in battle. German troops during World War II and Commonwealth troops in Korea also displayed this deplorable but characteristically human failing. It was not unusual to find that up to 40 or 50 percent of the individuals in night ambushes in Korea failed to fire at all or produced ineffective fire as a result of firing their weapon in such a way that their position was not betrayed to the enemy by the muzzle flash of their personal weapon.

The underlying reason for this apparent defection was simply active expression of the desire for self-preservation in the more psychologically inadequate individuals. It was probably more prevalent at night, because under cover of darkness there was a better chance of getting away with it. Nevertheless, even by day, the potential is present, especially in extended linear ambushes in close country.

Modification of Tactics

Supression of fear and panic reactions by leadership techniques is well-appreci-

ated. But consideration should be given to means whereby the degree of personal effort by the leader is reduced or made more effective. Certain tactical arrangements can be modified to channel human behavior under the stress of battle. This, coupled with realistic training, firm discipline, and good leadership, must increase operational efficiency.

Realizing the incidence of "nonshooters" likely to be present in any group, particularly the inexperienced group, it will be appreciated that it is to the leader's advantage to compromise the individual in such a way that his reaction is to produce effective fire if only as a means of self-preservation.

The case of the assault from ambush demonstrates a method of compromising the individual. It is unlikely that the nonshooter will elect to stay behind. Once committed to the assault he must fight for his life. In so doing his tension will be released and his fire will probably become effective.

The actual layout of a static position can also influence human behavior. Any soldier who has taken part in successful attacks against even such renowned fighters as the Japanese will recollect the number of cases in which the enemy soldiers were found to be cowering at the bottom of their weapon pits, firing noisily but aimlessly into the air. It would seem that after the initial cracking of the defense the assaulting force may arrive at their objective by courtesy of the enemy.

The question is—what can be done?

The individual can be compromised by ensuring that he is not alone. Two men sharing one weapon pit are less prone to panic than one man on his own. Interdependence in the form of teamwork is most beneficial, thus an LMG team is less susceptible than a pair of riflemen. These factors may have much to do with the current British policy of establishing the weapon pit system in groups of four.

Personal Contact

Personal contact by the commander always is valuable. He can encourage, coerce, and, above all, supply some orientation of purpose in a state of genuine chaos. There is a tendency to lose sight of this chaos in conventional, organized accounts of battles.

Brigadier General Marshall in an address emphasized the need for intercommunication:

Later on, during the Marshalls invasion, General Arch Arnold asked me to determine why it was that an infantry line, checked three times by enemy fire in a quite short movement, even though it took no losses, became spent and could not renew the advance. It was a puzzling phenomenon. I found certain things wrong with our tactical procedures.

We were fighting through semijungle, much like the growth in Florida Keys. When the line went flat after being fired upon, the men could not see one another. They remained inert and fearful; there were no devices for giving them quickly a sense of the presence of others. So group collection stagnated and the individual spirit withered. A technical solution was immediately possible. It was recommended that at the onset of any such situation it be made SOP for all junior leaders to crawl along the deployed line, each calling to his men. In this way we could partly overcome the greatest enemy of the individual rifleman—individual loneliness.

Man is a gregarious animal. His greatest steadying force is the touch of his fellows under battle pressure—he cannot long endure out of sight and voice contact with them. It was so in the time of the Medes and Persians, and it will be so in the wars of undefined dimension in a terrible tomorrow. Such marvels as radio and television do not change it.

We need the touch of the hand, even as we need the conviction that we are a useful part of something larger and more

important than ourselves, whenever the pressures of life put inordinate demands upon our frail persons.

The Nature of Weapons

The design of weapons for defense is another important field for examination. Research should be aimed at producing weapons which the soldier can handle with ease and confidence under battle stress and in such a manner that during the process of reloading or recharging magazines he need not be distracted from his study of the enemy's movement.

For such reasons the family of small arms as a group will bear investigation. A weapon found to be adequate in training may be far from satisfactory when the soldier is under considerable emotional stress in the heat of battle.

The Germans in Italy studied this problem during World War II, but their approach was rather negative in that it undermined morale. Nevertheless they were quick to recognize the problem. Apparently the incidence of "deliberate failure to fire" among their second-rate infantry troops was extremely prevalent.

They introduced machine carbines (*MP 43*) with curved barrels and periscope type sights. The idea was that since troops could not be forced to stand up and fight from their pits then perhaps they would produce effective fire while cowering at the bottom of their weapon pit by extending the curved barrel over the parapet.

It has been suggested that in addition to designing a defensive layout embodying the principles outlined above, the optimum family of small arms for defense should incorporate a very much increased scale of grenades. Should the individual elect not to expose himself to fire his principal weapon, then he can comfort himself with regard to the production of noise and the stimulus of activity by lobbing grenades. In this way at least his efforts would be turned to good effect, if not the best.

The arguments against this suggestion are obvious, but the fact remains that study of the weapon system for defense could profit from critical examination of the human reaction of troops under battle stress in defense.

Fatigue

It is difficult to define man's limits under emotional stress. There is a relatively new science developing which deals with the interrelationship of psychological and physiological processes and their psychosomatic effects. Until this subject is studied more pertinently, serious errors in estimation of a soldier's capacity in battle will continue to occur.

For instance, from a physiological standpoint one can recommend the optimum load and rate of carrying the load for the individual soldier. However, in practice the optimum should only relate to conditions well to the rear of the combat zone, for, as the soldier approaches the center of combat, his capacity for physical performance drops drastically as the psychological stress increases.

General Marshall interprets this phenomenon in a more serious sense:

The more heavily men are loaded the farther they move, the more susceptible they become to fear. The more intense becomes their fear, the greater becomes the impairment of their physical power.

It is almost axiomatic that the physically fit are less susceptible to fear. On the other hand, the "old soldier" with battle experience comes to adopt a philosophic attitude to danger, not akin to fear but more in the nature of superstition.

Fear and fatigue are interdependent and reciprocal in their effects. The related subject of recuperation also is of great importance in that it has a bearing on the design of tactics.

Where emotional stress has been the main contributing factor in fatigue and the stress has been of short duration, only a very brief period of rest is necessary for

recuperation. A 20-minute rest at the conclusion of an attack, should the tactical situation permit it, will work wonders and pay great dividends in terms of restored confidence and increased physical capacity. Even after intense and prolonged battle stress over a period of days, 48 hours' complete rest will restore full operational efficiency.

There is a definite tendency to underestimate the resilience of man. Unreal limits are set to his performance, usually as a result of a false interpretation of his apparent physical condition when in fact the state is a reflection of emotional distress rather than physiological distress. Even the briefest rest after each emotional experience will pay dividends in much the same way as a stitch in time saves nine.

On the other hand, failure to recognize the requirement for rest can prove disastrous:

When fighting men are totally exhausted, no amount of discipline can make them dig foxholes or use average prudence. It becomes a physical impossibility. The time comes when inertia overpowers reason, and men would rather take a chance of death than make one more move.

Other Factors

In addition to the delay necessary for recuperation after an attack, there is another aspect which influences the employment of the same troops on successive tasks. Brigadier General Marshall commented:

It occasionally happened that with the completion of a task, group organization broke down and it required a strong stimulus to initiate coordinated action for attaining a further objective, even though reasonable safety depended on it. It would appear that the accomplishment of the interim mission temporarily destroyed all anticipation of anything further happening.

The implication is clear that any tactical plan should only require one body of troops to tackle one task. A definite period of reorganization and rest is required before full operatonal efficiency can be called for a second task in the same sequence of battle.

Brigadier General Marshall is interesting on the subject of combat fatigue (emotional breakdown). He has said:

One of the most challenging military statements I know is that in World War II more than 50 percent of our so-called combat fatigue cases failed their first time in battle, and that the majority of these were men who had just arrived and were given no opportunity to meet their unit. Yet we still tolerate procedures which directly promote this rate of wastage, and we even call it good.

The condition in Korea under rotation was the sorriest example I can call to mind. Replacements would arrive at the frontline unit and be given a battle station. For maybe six weeks or more they would belong to a company without ever seeing it, though they were part of it in combat. They knew only the men living in their own bunkers.

It speaks well for the Royal Australian units in Korea that they did so well despite the iniquitous individual rotation scheme. Nevertheless an unnecessary burden was thrown on commanders at all levels and on individual riflemen. It may have been cheap or expedient, but it was no help to the human spirit.

National Characteristics

The reader hardly needs prompting to grasp the significance of national characteristics as determinants of individual and collective reaction under stress. It is common knowledge that some nationalities are more susceptible to panic than others. Rommel certainly appreciated this fact when disposing his German and Italian formations for the Battle of El Alamein.

Some nationalities are more suited to one phase of war than another. It is said that the English are at their best with their backs to the wall, whereas Australians are at their best in attack and exploitation.

In these days of integrated forces, a commander will do well to appreciate the national characteristics of his various national units and formations with a view to exploiting their good characteristics and inhibiting their weaknesses.

Summary

Human weaknesses in battle should not be placated. But a thorough evaluation of human reaction in battle can be to our distinct advantage, if we are successful in exploiting it in the enemy and inhibiting it in our own troops.

Detailed knowledge of man at war—the bad as well as the good aspects—given to the young leader uninitiated to battle will do much to reduce his dependence on battle experience before he can attain the peak of operational efficiency as a leader.

By "conditioning" the inexperienced soldier; by developing realistic minor tactics; and by designing weapons *with proper regard to the nature of human reaction to battle stress*, a realistic advance can be made in the field of utilization of "man, the weapon."

Urban Terrorism

Translated and digested by the MILITARY REVIEW from an article by Colonel de Rocquigny in the "Revue Militaire d'Information" (France) February 1958.

IN THE past, war was the job of specialists organized into professional armies. These armies met in short conflict at a place generally chosen by one of the leaders, and by "physical" battle determined the victor. The evolution of weapons and methods gradually drew the entire territory and the full manpower of the contending nations into general mobilization. Considering the human factor, however, this mobilization could hardly be truly general because it involved only the physical strength and technical skills of the soldiers.

In 1940 the "psychological war" appeared, aimed at subduing the mind of the hostile population. In this new kind of war the two adversaries deliberately involve the entire population in order to convert it to their respective ideologies and put the opposing fighters under pressure.

In the gamut of means used in this kind of war there has appeared a new arm: urban terrorism.

Objectives

The terrorist, instead of seeking the victory on a battlefield, strives to win over to his cause the population which is controlled by his enemy—the actual governmental authority. This conquest may be attempted in the seemingly calm atmosphere of peacetime, in the form of a cold war; or, with other arms, in a hot war.

Urban terrorism is the arm for conquering the minds of the people in the transitional phase between the cold and the hot war.

There is a saying that "the people are for the terrorist what water is for the fish." The less dense the population, the less numerous the terrorists because there are fewer people to deal with, and they encounter more difficulties of survival. On the other hand, the heavier the population the more numerous the terrorists have to be and the easier it is for them to recruit.

The ideological conquest is progressive and has two phases: In the first phase, the population becomes indifferent toward

the established authorities. It does not support the terrorists as yet, but it permits them to carry out their actions and does not lend assistance to the actual executive power. During the following phase, the terrorist finds helpers from within the population who take an increasing part in the battle and furnish recruits. In this stage terrorism starts snowballing.

The Aims

Urban terrorism aims at *the destruction of the existing organization of the population.* The demographic organization is made up of political, governmental, municipal, police, trade union, commercial, industrial, and religious hierarchies. Their leaders, from the lowest to the highest rank, have been assigned to their posts by virtue of their abilities and capacities as well as to the confidence bestowed on them by the established power. Therefore, they are the foes of the rebels by nature.

Consequently, one task of urban terrorism will be to set up revolutionary cells inside the established hierarchies to force the removal of their leaders or kill them. These actions can be achieved by personnel devoted to the revolutionary movement and insidiously placed in the organizations.

Urban terrorism has still another objective: to bring about the failure of measures against the terrorists. This has twofold consequences. First, the forces charged with keeping order are to be prevented from getting hold of the masterminds of terroristic plots. Second, the repeated failures of these forces will depreciate their combat value. Police forces, security services, and military units—all continuously in action but not getting results which match their efforts—eventually will lose the confidence of the population.

The disorganization of the existing hierarchies and the persistent failures of the police forces to keep order and peace facilitate the ideologic domination of the population by the terrorists. The masses, finding themselves undefended and without encouragement from their normal leaders, are ready to fall prey to the terrorists. These, in turn, will offer a certain protection to the people, but will evade their demands.

In essence, the arm called urban terrorism is used to assure control of the population, and the terrorist will have attained his goal when the population is first disorganized by him then, provided with leaders, eventually comes completely under his control.

Typical Features

The population to which urban terrorism is to be applied is subjected first to preparatory propaganda which is a composite of all the ideas that could advance the terrorist's cause. These ideas always are extreme and selected through long studies and preliminary investigations. Some of these are: nationalism, religion, race and class antagonisms, poverty, land distribution, and living costs. During this propaganda campaign the first terrorist agents are recruited, and often sent to training schools.

After these preparations, the terrorists move into their fields of action—incognito, of course. Since their arrival has to be unobtrusive, they cannot carry along heavy matériel for battle; they have to get their first stock of arms from local sources. Gradually, and according to the situation, they are supplied and receive arms and ammunition through channels which they have to establish.

Numerically, the terrorist organization is weak at this stage. They have to get reinforcements locally, find men of action among the individuals that have succumbed to the propaganda, or from among those discontented with the established order. They always are short of means. At the most, they have some grenades, hand firearms, submachine guns or knives, and, later on, radios at their disposal. From the time of arrival at the scene of action they have to live in concealment,

find followers, make progressive gains in securing the confidence of people, and so work their way up. Later they become stronger and set up cells; they pull in other individuals and tie them to the terroristic movement. They proceed like gangrene, attacking one little bit of healthy organism after the other.

Thus terrorism is a weak arm at the beginning and is extraordinarily weak compared with its target, which is a large population still more or less uninfected by terroristic ideology, strongly organized, and with an established defense system.

From the start, the terrorist finds himself in conflict with the governmental, municipal, political, union, commercial, and religious hierarchies, and with the defense bodies of the population.

If the terrorist is successful, the people, heretofore undecided and under pressure of his propaganda, will turn toward him. The reason for this may be sympathy with the terrorist's ideology, displeasure with the existing situation, the desire to oppose the present regime, or fear.

Admiration for the daring coups and their successful issue also are to be considered, especially in the case of young people. Then, terrorism starts snowballing.

On the other hand, if the terroristic actions are more or less failures, neither those affected by propaganda nor those who are dissatisfied with the existing order will venture to get entangled with the terrorists; nobody will object to a government that persecutes the criminals; the youth will admire a victorious police force, and here, the "good" citizens will have reason to put confidence in the forces in charge of maintaining order.

Hence for the terroristic action, success is essential. In general, the target is of such a nature that the terrorists are perfectly free to choose the time and place that will best secure the particular mission. Only in very special cases of terroristic actions, and very seldom during the initial stages, is either time or place, or even both, determined by factors which are beyond the terrorist's control.

Detailed Preparation

The first feature of terroristic action is the fact that it is the result of a *detailed preparation.* Particularly, in its initial stage, terrorism must be immediately successful; only under this condition will it be appealing and able to produce further and final success.

To this end, the terrorist chooses persons or objects as targets which will help him to gain the sympathy of the majority of the population. He has his objective to suit to the desires of the population. The first grenade, the first pistol shot has to be aimed at the leader that is least liked.

In order to cash in completely on his success, the terrorist's action *has* to avoid bringing suffering to the population. For instance, the destruction of the bread crops in a country where the population suffers from malnutrition would hurt the terroristic cause; on the other hand, destruction of vineyards in a country where the population is not a wine consumer would be perfectly feasible.

Furthermore, it is imperative that the masterminds and instigators of a plot escape the police forces, lest the recruitment of terrorists be negatively affected.

Consequently, the organization of such actions requires a thorough knowledge of localities, people, customs, and habits which can be obtained only through scrupulously exact reconnaissance with the assistance of local petty agents.

Attitude Toward Law

As we have seen, terrorism tries to gain domination over the population. The population constitutes a society living within a certain organizational framework with its leadership and its laws, and with the means to keep up these laws. Generally, the leadership is more or less popular and accepted. Certain elements with some advanced ideas are hostile to

this organization, but the great majority accepts it. Therefore, the terrorist tries to obtain the ideological domination by disregarding and overturning the commonly accepted rules. Among these rules are the imperatives of natural or religious morals, the conventions of war, and so forth. The mission of the actual government and of the bodies which enforce laws are based on these rules. It is incompatible to abide by the rules on one hand, and, on the other, to overturn the ancient order to establish a new one. Therefore, terrorism—and this is another of its features—breaks away from all the laws which form the pillars of society which it seeks to overturn. Its real motto is: *The end justifies the means.*

In the fight against terrorism only those means can be used which are provided for within the framework of laws governing the threatened society: judicial laws, laws of war, and principles of natural or, sometimes, religious morals. For terrorism, not submitting to any of these laws, "everything is allowed," while the actual authorities are bound by the "rules of the game."

We even find that this incompatibility in the attitude toward law of the two adversaries is considered by the terrorists to be one of their principal trumps. One side fights as a sniper; scorns the Geneva Conventions; orders and willingly tolerates robbery, arson, lies, and murder, but when caught demands a trial with judges, counsels, attorneys, and in accordance with the judicial code. The other fights in uniform, showing due respect to the Geneva Conventions, the rules of justice of the 20th century, and the laws of the nation.

Security

The present structure of society and its organization are the result of an evolution of many centuries. Among the laws on which society is based there are regulations providing for its self-defense. There have always been criminals—among whom the terrorist is just one particular case—and society always has tried to protect itself from them.

Necessarily, terrorism organized itself in such a way that it is least affected by the laws of society. This is the cellular type of organization: each terrorist knows only his three subordinates and his chief, and sometimes perhaps a few other accomplices of the same rank. Terroristic elements are organized in very small isolated groups, each one knowing but a tiny part of the big chain of which they all form the links. Even if one of these links is seized, it is very difficult to trace the chain up or down. Furthermore, each link fallen out can quickly be replaced. Thus a Penelopean job is awaiting the intelligence services and the active forces fighting terrorism.

The vitality and development of terrorism depend largely on its initial success. Terrorism can be compared to a germ infecting a healthy organism; if this organism defends itself, the germ will be counterattacked immediately by the sound blood cells, is weakened, and, later, disappears; on the other hand, if the organism is feeble and defends itself insufficiently, the germ thrives and its activities gain momentum. When the infection finally is recognized, the self-defense of the infected organism has to be stimulated somehow, and this requires more *means* than in the case where the infection can be wiped out in its initial stage. *In the fight against urban terrorism,* once its strong and weak points are exposed, it becomes feasible to determine measures to check its effects.

The Population

The terrorist, by making use of causes of discontentment, turns individuals first into passive followers, and later into active opponents of the established authority. Therefore, the causes for discontentment have to be investigated and analyzed, and the possible remedies determined and applied at the proper place.

We have pointed out that terrorism tries to disorganize society and attacks its hierarchies to make it more vulnerable. To counter this social reorganizations must be considered, leaders evaluated, and key positions filled with reliable and competent men. This has to be undertaken in every area of life; governmental, political, municipal, police, union, commercial, industrial, and religious. If necessary, the most important personalities have to be protected and defended.

Residential districts can furnish the elements for a watching organization. This makes it necessary to take a census, requiring a survey of every street and every house. A responsible individual is appointed to control every family, group of families, and block. Slums have to be razed and rebuilt if necessary. Actually, all districts have to be made passable for automobile traffic to facilitate control.

Counteraction

At the same time, the possibility of the terrorists escaping after their coups must be reduced. Their escape routes must be closed. This leads to the construction of barricades, both permanent and mobile, at important intersections. Thus in case of a terroristic action, the flight of the terrorists will be channeled toward certain points which can be kept under control. This leaves them only three ways to escape; over the roofs, through gardens and hedges, and into houses.

The flight "over the heights" can be prevented easily by posting armed guards on carefully selected lookouts. Gardens and hedges have to be completely cut down to the ground, or, at least, considerably trimmed. As for terrorists hiding in houses, this becomes the responsibility of the respective house or family chiefs appointed in connection with the census. The householders, of course, will not be very anxious to help their "guests" who can only be a source of trouble.

The use of all these measures will permit the organization of the city and create an unhealthy atmosphere for the terrorists.

The Preventive Fight

The next step will consist of a *preventive fight* prepared for by the organizational measures advocated above. The basis of this preventive fight is *information*. A minor bit of information can be a clue leading to one of the terrorists, from there to one of the links, and from the link to the entire chain of the enemy structure.

Sources of information are innumerable, particularly in a city where everybody, voluntarily or not, can be an intelligence agent. A wide field of activity is open to the man who is in command of the antiterroristic fight, and to all under his command. Some success may be accidental, but most other results are the fruit of careful work. The many bits of information pouring in each day, when checked, classified, and filed, eventually may form a body of information which permits a strike against the heart of the terrorist organization.

The preventive fight requires a common general attitude of the population. Everybody in the city, with no exception, has to live for nothing but the antiterroristic fight. They have to be "on the alert," thinking about what kind of action the enemy could undertake at any moment. Then, the terrorist will find it difficult to discover anything really vulnerable.

We have seen that the terrorist carefully studies the scene of his plot before he acts. One of the best measures to counter him is to avoid the formulation of habits. As soon as the enemy cannot find rules in our movements and faces continuing changes, he has to act at random, and, thus loses one of his trumps. Moreover, the number of patrols and ambuscades must be brought to a maximum.

If, in spite of all these measures, *a terroristic act should happen, counterac-*

tion must be planned in such a way that the terrorist not only gets no advantage out of his act, but that it eventually helps the "defender's" cause.

The first goal is to apprehend the culprits, and, if possible, the real masterminds behind the entire affair. To this end, above all, the flight of the culprits has to be prevented. Immediately after a terroristic action, all mobile barricades have to be closed. The entire population must abstain from any movement whatsoever.

Police forces, militia, and military emergency forces, like the emergency fire brigade, must be permanently on the alert. Some move quickly to the place of the terroristic act, and others establish a tight cordon around the area where the terrorists could have found a place to hide. The extension of this area depends on the time elapsed between terroristic action and the effective start of the counteraction. From then on, searches and identity checks begin with all possible strictness. Any fugitive who disregards the order of immobility is arrested or, if necessary, shot on the spot.

The examination of witnesses and suspect elements, and papers or objects found in the search eventually will lead to the culprits or terroristic instigators.

Successful Terrorism

Still remaining is the case of the terrorist who is successful in his action. The terrorized witnesses never seem to have seen anything. Certain elements undoubtedly may even have facilitated the terroristic act merely by remaining passive. Whatever it may cost, it is imperative either to punish those who did not want to see anything and decline to give information, or to create, in the population, feelings unfavorable to the terrorists.

Obviously, it is difficult to find the best ways to handle this matter. One necessary initial action will be to close the shops near which the terroristic action took place. This is especially necessary where the shopkeepers fail to give adequate excuse for their "indifference."

Another measure will consist in finding individuals who either live near the place of the terrorist act, or who were passers-by at the time it happened. If they are not willing to give information, it can be assumed that they do not desire to assist the forces charged with maintaining order. Therefore, they are liable for "not helping a person in danger," and their fines are justified. All this, it is hoped, eventually will result in these people inviting the terrorists to move out and perpetrate their acts somewhere else.

Then, there is still the case where there are no witnesses. In this case it is often possible, with a good intelligence service and a little good luck, to get information concerning financial or other support the rebels have received. Those individuals furnishing such support will be fined depending on the extent of their contributions. Experience proves that judiciously imposed fines are paid.

The majority of the complaints about these fines will be found in enemy documents, because the fines paid go into the state treasury. In fact, terrorists have complained to their chiefs about their collectors being unable to dig up more funds because of the fines imposed by the legal authority. These measures will consequently make terroristic acts unpopular, not only with the terrorist followers, but also with those fence-sitters who are sympathetic toward the rebellion.

Summary

Urban terrorism tries to subdue the population and, at the same time, disorganize it, and render the legal power ineffective.

The terrorist, not being a "strong man," takes action only when the successful outcome is sufficiently assured. He prepares his attempts scrupulously and carries them out deliberately.

For the terrorist, "the end justifies the means."

If he is successful, the number of his followers snowballs. But, the opposite is also true. Terrorism is like a chain, divided into many cells forming the links.

These are the general features of urban terrorism. We have to know them if we want to exploit its weaknesses. Terrorism pursues its mission incessantly and totally engages itself in a fight in which the terrorists allows himself all of the liberties.

Counterattack requires a thorough knowledge of the enemy, a continuous initiative, a complete devotion, and it will be fought through to the final decision without truce. Those who have to fight terrorism have to dedicate their lives to their mission in order to catch the enemy and not get caught themselves. In this fight, the more tenacious party will obtain the victory.

Italy's Role Within NATO

Translated and digested by the MILITARY REVIEW from an article by J. Wullus-Rudiger in "L'Armée La Nation" (Belgium) December 1957.

ITALY suffered greatly under the mistakes of her Fascist rulers. At one time, some people even mistakenly thought her downfall to have been complete. It is incorrect also to label her recovery as a new *risorgimento* of the same type of patriotic movement which brought her unification and ascent to the rank of a great power in the last half of the 19th century.

On 21 September 1943 in the House of Commons, Winston Churchill declared:

The Italian armed forces and the Italian population have manifested opposition or even open hostility against the Germans. . . . In every respect, the unfortunate government of Badoglio was confronted with insoluble problems and yet, according to our opinion, since the armistice has acted with courage and in good faith.

However, that same day General MacFarlane, chief of the Allied military mission to the Italian Government, stated that the Italian troops would take no more part in the actions until they received new orders. At Malta on 29 September 1943 Badoglio offered in vain all Italian armed forces and resources of the country for the battle against the Germans. Among other things he had planned to make available seven divisions and a motorized corps of about 10,000 men outfitted exclusively with Italian material. Three other divisions would have been ready within a short time.

The following month, Badoglio again offered to form a number of large battle units from Italian prisoners of war. Further Italian proposals to the same end also were unsuccessful.

Until the beginning of 1944 the Italian Government did not receive any aid in the form of military equipment for new battle units. Also, the Allied authorities refused military help from Italian volunteers who had withdrawn to neutral countries, many of whom had sought such refuge because of their antifascism. The Allied authorities even went so far as to decline help from the Garibaldi Legion which was formed in France at the beginning of the war in 1940 and which fought at Tours.

On the other hand, the Allied Control Commission made it difficult for the royal government to restore order and discipline in the Italian state. Yet one cannot ignore the reasons which dictated this attitude to the Allied authorities, keeping in mind that military interests probably had to

be placed before other considerations, and that, above all, the hard realities of the future had to be faced. Two of these reasons are:

The British, French, Greek, and Yugoslav authorities wanted to limit the Italian contribution to the victory of the Allies since they intended to make territorial claims at the cost of Italy, their ex-enemy.

Furthermore, a little time after the armistice of September 1943, the Soviet Union had shown a pronounced interest and sympathy toward the Badoglio government—at the same time claiming part of the Italian Fleet and parts of Libya. When Stalin nominated an ambassador to Italy, Churchill and Roosevent reluctantly had to follow the Russian example.

Badoglio wrote about this subject:

It remains to be known if these unanimous declarations concerning our future fate did not hide differences and rivalries among the three great Allied nations. Clouds darkened our relations seriously the moment I accepted Moscow's proposal to exchange diplomatic representatives—this obliged the British and American Governments to do the same.

Second Phase of World War II

During the second phase of the war in Italy and until April 1944, the Allies allowed a limited participation of Italian troops in the actions (14,000 men). In the fall of 1944 this number was raised to 300,000 divided into six "battle groups" which made up the Italian Liberation Corps. This force was supplemented by auxiliary support troops numbering several hundred thousand men and by volunteer formations of "partisans," partly composed of former military men. The actual number of the latter is hard to establish, however, it seems to be above 300,000 men.

The financial and economic contribution of Italy was considerable.

On the eve of the German capitulation General Browning, chief of the British military mission to the Italian Government, wrote:

Undoubtedly, the Italian Army has contributed to the liberation of Italy and to the final defeat of the Germans on the Italian front. . . .

On 4 December 1945 Marshal Sir H. A. Alexander declared:

A great example of cooperation has been demonstrated by the Italians. Six Italian groups . . . played a very important part in the final phase of the victory.

The Soviet Menace

Despite her contributions to the victory of the Allies after September 1943, Italy lost almost all of her possessions overseas; even her continental area was subjected to amputations. She faced reparation payments in the amount of 360 million gold dollars. Her armed forces were reduced heavily.

However, the development of the political situation in the world, particularly the widening differences between the Soviet Union and her former allies, favored a revision of the peace treaty, an action supported by the clear-sighted and sympathetic policy of the United States.

The Russian menace became obvious during the blockade of West Berlin and during the Korean war. Moscow's tentacular imperialism also was manifested dangerously in the Balkan Peninsula and the Mediterranean Sea. Here, Italy occupies a prime strategic position. (See Figure 1.)

The Kremlin's interest in the Balkans and the Mediterranean was not surprising. As far back as 1770 the Czarina, Catherine II, tried to get hold of the Turkish straits and become established on the Mediterranean Sea. In 1807 the British forcibly entered the Dardanelles to obtain the symbolic key to Turkey and to confine the Russian Fleet to the Black Sea. Lon-

don followed this policy tenaciously during the entire 19th century and until World War I.

In 1917, on the eve of the collapse of the Czarist government, St. Petersburg asked for, and secretly obtained, the approval of France and Great Britain, that the Turkish straits should come under Russian domination after the victory of the Allies.

During his visits to Berlin on 13 and 14 November 1940 Molotov hardly bothered to conceal the Soviets' urgent need for seizure of parts of Romanian territory, the Bulgarian Black Sea coast, and the Dardanelles. On 27 November 1940 he sent a memorandum dealing with this subject to Berlin. He asked, among other things, for a treaty of mutual assistance between the USSR and Bulgaria, and for the establishment of Russian bases near the straits on Turkish territory. At the end of that month, bypassing German objections, the USSR tried to negotiate this with the Bulgarian Government, which, however, refused. Hitler kept the Russians out of the Mediterranean Sea by putting Romania and Bulgaria under the protection of the German Army.

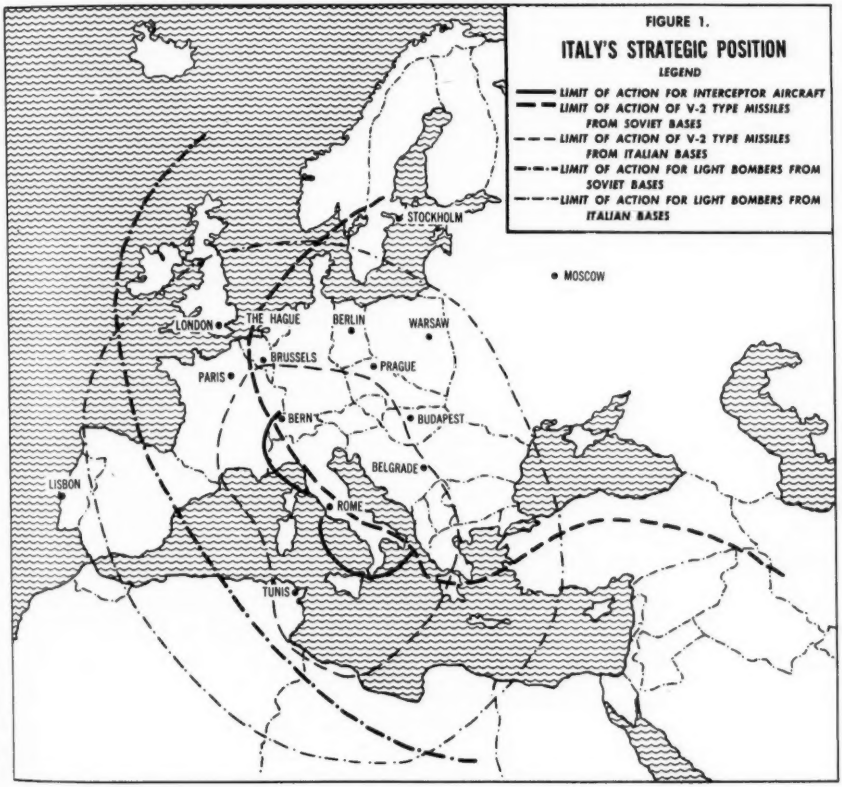
During the final phase of World War II, Churchill tried in vain to induce at least a partial occupation of the Balkan

FIGURE 1.

ITALY'S STRATEGIC POSITION

LEGEND

- LIMIT OF ACTION FOR INTERCEPTOR AIRCRAFT
- LIMIT OF ACTION OF V-2 TYPE MISSILES FROM SOVIET BASES
- LIMIT OF ACTION OF V-2 TYPE MISSILES FROM ITALIAN BASES
- LIMIT OF ACTION FOR LIGHT BOMBERS FROM SOVIET BASES
- LIMIT OF ACTION FOR LIGHT BOMBERS FROM ITALIAN BASES



Peninsula by the American and British forces before the start of the invasion of northern France. It seemed to him to be very important to prevent a total Russian occupation and its inevitable consequences.

On 8 May 1945 Moscow's hegemony extended as far as the shores of the Adriatic Sea. Subduing the Balkan States in the name of communism, Stalin obtained a strong hold of the Dalmatian coast from Fiume to Valona in southwest Albania. Actually, Albania has to be considered a Russian military base within the region of the Adriatic and Mediterranean Seas.

In the same way, Moscow tried to become established on the Aegean Sea, fomenting and supporting a terrible civil war in Greece. But when the United States extended her help to this sorely afflicted country, making Stalin understand that she would not back out even at the price of an eventual extension of the conflict, the Kremlin abandoned the Communist "General" Markos.

At that time German Chancellor Adenauer made the following remarks:

Wherever Stalin spots a weak point in the front of the Western Powers he exerts a strong pressure, preferably under some pretext. But when his pressure encounters the firm resistance of the Western World he puts an end to it. At this moment he does not want to kindle a general conflict, witness the occurrences in Korea as well as in Berlin and Greek Macedonia.

In the beginning, the dispute between Stalin and Tito also concerned the formation of a Communist state comprising the Macedonian provinces of Yugoslavia, Bulgaria, and Greece, and extending on both sides of the city of Salonika along the coast of the Aegean Sea. According to a competent source, the dispute even affected Albania.

Moreover, due to misery, disillusions, and confusion, Bolshevism had managed to acquire a large number of followers in Italy.

Recent Progress

Therefore, it was quite normal that, on the eve of the revision of the peace treaty of 1947, Italy and the Western Powers were drawn closer together. The solution of the Trieste problem reinforced these ties. Italy, economically supported by the Marshall Plan, was admitted to the European Coal and Steel Community and the Organization for European Economic Cooperation. She also was invited to membership in the European Defense Community (Plan Pleven), Western European Union, United Nations Organization, and the North Atlantic Treaty Organization.

In these last years Italy has made obvious progress in the fields of economy and finance. More progress is to be expected. However, since her natural resources are small, while the population is growing rapidly, her assets will hardly ever exceed a modest average. The grave problem of the Mezzogiorno (the regions south of Naples) is on its way to being solved, but still far from any final solution.

On 1 July of this year (1957) the Italian armed forces were made up of the units as shown in Figure 2.

Italy in NATO

Italy's strategic importance already is manifested in the short historic outline given above.

As commander in chief of the Atlantic forces, General Eisenhower wrote that "Italy, protruding deeply into the Mediterranean, offers a strong lateral position with sea and airbases of high value." Admiral Carney, at that time commander of the Allied forces in southern Europe, voiced the opinion that "the wars are won or lost in the Mediterranean," and that "the Mediterranean has to be defended in the Po valley."

At present (1957), the chief of the general staff of the Italian armed forces is Lieutenant General G. Mancinelli. The following is a summary of how this energetic and intelligent officer defines the strategic position of his country and her role in the operational framework of NATO:

ITALIAN ARMED FORCES STATUS, JULY 1957

Ground Forces (Army)
- 10 infantry divisions
- 10 armored divisions
- 5 Alpine brigades;
- army troops and army corps (rifle battalions, transport corps, specialized artillery, and engineer groups)

Navy
- 3 cruisers
- 2 submarine chasers
- 4 heavy destroyers
- 19 frigates and destroyers
- 30 corvettes
- 5 submarines
- 18 conventional minesweepers
- 57 minesweepers, magnetic—acoustic
- 104 coast guard vessels
- 26 oceangoing auxiliary vessels
- 52 auxiliary vessels for coastal waters
- 79 auxiliary vessels for local usage

Air Force
- 3 brigades of fighter interceptors
- 3 brigades of fighter bombers
- 1 brigade for air reconnaissance
- 1 air transport brigade
- 2 antisubmarine groups
- 5 air assistance centers

Figure 2.

Italy is made up of the Alpine mountain system linking her to the continental bloc, and of the peninsula which, with Sicily at its tip, protrudes so far into the Mediterranean that the latter is divided into two distinct basins. Her sea and airbases easily control all the traffic. Furthermore, she links Europe with North Africa. If, by chance, the Atlantic Alliance should lose the eastern basin of the Mediterranean, Italy would represent a solid reserve position, guarding the western basin and protecting the supply lines for the southern wing of NATO's strategic deployment in Europe.

In the north her highly elevated Alpine system bulges deep into central Europe. It covers part of France and flanks solidly the deployment in Germany. Moreover, it offers a very important airbase as well as a base for counterattack against the Danube Plain and against the southern flank of an aggressor advancing across central Europe. This Alpine arc, extending over more than 1,000 kilometers (600 miles), is very difficult to cross. From this point of view Italy is, next to Spain, the region which is the most easily defended in Europe. Thus within NATO, Italy has a double function: She represents the pivot for air and sea actions on the Mediterranean field of operation as well as the primary defense and counterattack base for ground and air actions on the entire checkerboard of central Europe. Italy is the link between the theater of operations in central and western Europe, and the Mediterranean theater of operation. She plays a direct part in the defense of both areas.

The fundamental principles underlying the operational plans of NATO take these considerations into account. The Italian peninsula and Sicily have a position of such strategic importance that their losses could have decisive consequences for the entire Allied campaign in Europe. Indeed, if Italy fell into the hands of the enemy, the NATO front would be broken up and the communication lines cut. Enemy air and sea forces on the Italian peninsula and Sicily would completely

isolate the southeastern field of operations

The peninsula could be defended either at the Alpine border regions or in the Apennine Mountains, especially at the base of the peninsular trunk. But this latter hypothesis can hardly be realized since it means abandonment of the entire Po Plain, containing vital elements of Italy's population, resources, and industry. Furthermore, it would very likely give way to the formation of two antagonistic Italian governments and a fratricidal battle between the south and the north—between an anti-Communist and a Communist region. The plan of a total resistance in western and central Europe, as well as the plan of a 'peripheric strategy' calls for defense of Italy, and makes it essential that she be defended as a whole, from the Alps down to Sicily.

Conclusion

We cannot afford again to make the major mistake of neglecting Italy as a factor, either from the geographic point of view or with regard to her military potential on the ground, at sea, and in the air.

Are There Laws of War?

Translated and digested by the MILITARY REVIEW from a copyrighted article by General of the Army A. Niessel in "L'Armée La Nation" (Belgium) July 1958.

THERE is international law. But can there be international laws of war? War, a state of violence, always has been subject only to the rule of "might makes right." Nevertheless, customs of war have arisen through the centuries, and some of these have attained what amounts to the force of an unwritten law.

Kill or Be Killed

The adversaries in primitive society were unrestrained by scruples of any kind. Clubs, stone axes, and later, weapons made of copper, iron, and finally steel, essentially were meant for hand to hand fighting—the slogan of "kill or be killed" fitted them perfectly. The hurling of stones constituted the first long-range action; then came the use of the javelin; slings with a range of about 100 yards; and bows whose arrows carried as far as 150 yards.

Archers and spearmen were an integral part of the main body of the contending forces, for over-all safety required closely knit ranks, in which men were given only sufficient space to handle their weapons. Such formations also had great depth, permitting the direct replacement of casualties in the first line of combatants. The beaten foe—if encircled—was massacred. If the opponent fled, the pursuit was relentless.

The appearance of cavalry and elephants, the latter trained in warfare and carrying archers, did not change much of anything in the script. Fields were still laid waste and ruined, and the defeated populace, if not slaughtered, nearly always was reduced to slavery.

Fortified Cities

In early sieges of fortified cities, war engines were designed to operate against the walls of the city and its defenders, buildings, and inhabitants. Large rocks were catapulted as missile weapons, and dead animals hurled in to corrupt the air. The cisterns which supplied the town with water were poisoned. The Greeks used Gregorian Fire to burn the war machinery of the enemy and the houses of the besieged town. Later, artillery bombs and

incendiaries aided in reducing the population's will to resist.

In order to offset the effect of diminishing food supplies, noncombatants were forced outside the walls of the besieged fortress, if they had not already been expelled prior to the siege. The beleaguering army often refused to permit these unfortunates to pass through their lines, and so they found themselves condemned to starvation and hardship in the area between the forces.

The defenders of the walls were threatened with annihilation if they continued to resist. Generosity rarely was applied to an adversary. Romulus, for example, returning to captivity in conformance with his promise, was spared only for display as a trophy after which he was killed in cold blood.

Terror, inspired by the prospect of a general massacre, frequently has been used as a means of conquest. After every victory, the Mongols built pyramids of the heads of the defeated soldiers.

Torture and massacre were continued until very late in the Middle Ages. But in comparatively recent history the influence of Christianity preaching justice, good will, respect for women, and the protection of the weak began to soften these cruel customs.

The Age of Chivalry

Chivalry upheld, in principle if not always in practice, the same generous tendencies. But human nature is never capable of complete perfection. The lack of discipline among troops, social and racial hates, and religious fanaticism all too often furnished the pretext for excesses.

Wars between the classes were dreadful in France, England, and Germany —to speak only of Europe. Peasant uprisings and rebellions of cities against their lords for the most part were ended by bloody reprisals. Religious wars were frequent. Under the headings of serving God, the interested parties took advantage of religious hatreds to justify their cruelties.

Failure to honor obligations and the violation of capitulation agreements has occurred all too often in history. Leaders of the defending forces were hanged, garrisons slaughtered, and towns subjected to violence of every kind. The killing of wounded in cold blood was frequent.

But through the centuries one factor began to temper the taste for slaughter. This is the advantage to be found in holding prisoners for ransom. Since hostages were given as a guaranty for the agreement they were treated with care, as it was hoped that more money would thus be realized for their release. Exchanges were made either with individuals in place of ransom money or a number of prisoners exchanged on a reciprocal basis.

Progress

Contrary to what is generally believed, the development of artillery did not increase the number of dead and wounded. The interlocking effect of artillery fire called for judicial use of the terrain and the dispersion of troops, thus reducing their vulnerability. One effect of the dispersion and the increasingly long range of artillery duels was that the vanquished were given a greater opportunity to escape.

Little by little and without legal wording the ways of war became established as a tacit understanding between the civilized states. Respect for the status of noncombatants was admitted in principle, and looting was replaced by requisitions and contributions. Beginning with the early second half of the 17th century, capitulations generally were observed. Safeguards, often in writing, were granted to protect certain persons and areas against all violence.

The end of the 19th century witnessed tentative moves to codify laws for war. The Geneva Convention relative to the wounded in battle has been ratified by

all powers. It prescribes the care to be given to wounded enemies, and has made it easier to intern seriously wounded prisoners in neutral countries. The exchange agreement relative to wounded prisoners also has been made more feasible. One no longer witnesses the systematic massacre of wounded, and when such acts occur—even on a small level—they become the object of worldwide reprobation. Yet, it still happens.

Modern Cruelties

The Hague Convention attempted to solve numerous questions, in particular that of the treatment of prisoners, but was not ratified by several of the powers which attended the convention. Studies have been made of the conditions under which it is permitted or prohibited to use prisoners for certain labor, and of the care and pay to be given them. This attempt at regulation has not been wholly adhered to in fact, mostly because of the enormous number of prisoners taken during World Wars I and II.

Even before aviation made its appearance, the prohibiting of aerial bombardments was envisaged, but this effort has been in vain. The convention concerning the use of asphyxiating substances did not prevent the use of combat gases by both belligerents in World War I. Their use was not seen again in World War II solely because of the fear of reprisal. Flamethrowers made their initial appearance in 1914-18, and were used with even greater effect in the course of the Second World War.

Technical advances have permitted new developments in armament, transportation, and communication. The growth of mass armies demands an immense quantity of these items, and their production has required the creation of a number of factories, heavily staffed and with much heavy machinery. Such production facilities take a telling part in the war, and the right to destroy them has been deduced therefrom.

Artillery did not afford the means with which to reach far back behind the frontlines, but combat aviation has made this possible. On the other hand aerial interception and antiaircraft artillery make bombing expeditions dangerous undertakings. They are, therefore, usually carried out in mass formations, succeeding one another rapidly to render interception by fighter planes more difficult, and at very high altitude to avoid ground fire.

Bombs dropped from high altitudes and massed aircraft formations against area targets certainly result in considerable danger for the population living near the objective under attack. There is no longer any safety for noncombatants. Thus modern progress, to a certain extent, brings about the return of the cruelties of barbarian times.

Naval Evolution

Naval warfare has been a like phenomenon. In the past the battle was resolved by the victorious side boarding the enemy vessel and inflicting the same ferocious treatment on the beaten opponent as in a town taken by assault. Gregorian Fire added the hazard of incendiary fire.

Early smoothbore artillery, which came into use as naval warfare advanced, did not permit combat over great distances, but with it came a modification of the attitudes toward the defeated. The survivors of a destroyed vessel swam to the surface, and it became a tradition to save the shipwrecked by making them prisoners. In addition, instead of destroying enemy vessels, if possible they were seized intact to take advantage of the increase of strength that their capture afforded and of the riches that they contained if they were merchant ships.

Today, the intervention of submarines and planes does not permit the rescue of the shipwrecked, nor can captives readily be used to operate a modern war vessel.

Even in combat between surface vessels by cannon and torpedo, the combat distances have become so great that, for all practical purposes, one cannot come to the rescue of the victims.

Rebirth of Horror

We see, therefore, that in spite of the easing of the customs of war that have been introduced little by little, modern progress in all forms has contributed to bringing about the rebirth of some of the horrors of war in antiquity, particularly for the population not directly involved in the fighting.

Furthermore, the duration of war brings about the retention of prisoners for years, the breaking up of homes, and inhibits the birthrate. This creates, for the present, an awkward social and family situation, and, for the future, a dangerous weakening of the races.

Human nature is never capable of complete perfection. Once passions and hates are unchained, we always run the risk of excesses.

Conclusion

This portrayal of the conditions of war in our days is somber but not exaggerated. The sufferings of humanity in general during an armed conflict continue to be great. But, terrible as they are, we must remind ourselves that they are not as bad as the massacres of entire populations used to be, nor the enslavement which almost inevitably awaited those who escaped death in past wars. Victory in war is still the best available way of avoiding the cruel ordeals that could be imposed upon us.

Correction—In the October 1958 issue of the MILITARY REVIEW, on page 14, "The Chain of Defense," by Major Reginald Hargreaves, last paragraph, first sentence, "Although the buffer State of Afghanistan is a signatory of the Baghdad Pact. . . ." should read "Although the buffer State of Afghanistan is **not** a signatory of the Baghdad Pact. . . ."—Editor.

BOOKS OF INTEREST TO THE MILITARY READER

ANTARCTIC ASSAULT. By Commander Paul W. Frazier, *United States Navy*. Foreword by Rear Admiral George Dufek, *United States Navy*. 237 Pages. Dodd, Mead & Co., New York. $4.00.

BY LT COL ERKKI LAHDENPERA, *Inf*

The author served as a staff officer under Rear Admiral George Dufek on the Antarctic Continent in 1955-57 establishing stations and furnishing supplies for US scientists now taking part in the International Geophysical Year.

Commander Frazier has had previous experience in the Antarctic and also has made two trips to the Far North before he began this duty. The author praises highly the leadership qualities of Admiral Dufek and the spirit and skill of the "Dufek's Volunteers" as the members of the expedition were called. Their mission was challenging, often hazardous, but also rewarding. Threat of icebergs, storms on the ocean, white-outs which caused helicopter crashes, crevasses in which men perished, and unloading supplies are examples of the difficulties encountered.

Perhaps the most interesting part of the book is the story of the establishment of Byrd Station. The mission was to locate a safe trail 600 miles from Little America over dangerous "Crevasse Junction" and the ice plateau. The tractor train made the trip in 40 days.

Over-all, the book is well-written, easily read, and spiced with good humor. It is a worthy contribution to the literature covering Antarctic explorations.

SERVICES AROUND THE WORLD. The Army Air Forces in World War II. Volume VII. Edited by W. F. Craven and J. L. Cate. 666 Pages. The University of Chicago Press, Chicago, Ill. $8.50.

BY LT COL GEORGE B. MACAULAY, *Arty*

This seventh and final volume completes the monumental task of preparing the official history of the United States Air Force activities during World War II.

Volume VII, *Services Around the World*, is concerned with the various Army Air Force service organizations and the part each played in contributing to the final victory.

The tremendous achievements of the Air Transport Command in all theaters of operations are vividly covered as are the exploits of the aviation engineers, the Army Air Force Weather Service, the Army Airways Communications System, and the Army Air Force Medical Service.

Of particular interest also are the chapters devoted to the handling of morale problems, the operations of the air-sea rescue service, the Air WAC program and the redeployment and demobilization programs.

Liberally sprinkled with maps, charts, and photographs, this volume is a valuable addition to the USAF history set and to the military reader's library.

REBELS AND REDCOATS. By George F. Scheer and Hugh F. Rankin. 572 Pages. The World Publishing Co., Cleveland, Ohio. $7.50.

THE OFFICIAL ATLAS OF THE CIVIL WAR. Introduction by Henry Steele Commager. 395 Pages. Thomas Yoseloff, Inc., New York. $40.00

BY COL RODGER R. BANKSON, *Inf*

Throughout the Civil War there was a desperate scramble on both sides to provide the maps so necessary to sound tactical operations, and more often than not the opposing forces groped for each other, taking advantage of the terrain as they found it.

After the conflict the War Department launched a great historical undertaking which, during the years 1880-1901, produced 128 volumes, comprising the *Official Records of the War of the Rebellion.* During the same period the important accompanying atlas was produced. Preparation of this volume required the undivided effort of Lieutenant (later Captain) Calvin D. Cowles from 1891 to 1895. His research required hundreds of letters and interviews and one of his chief consultants proved to be former Confederate Captain Jedediah Hotchkiss who was responsible for more than 100 of the maps presented in the volume as finally published.

Today, the original *Atlas to Accompany the Official Records of the Union and Confederate Armies* is rare. It is this volume which has been republished and an imposing volume it is. Almost the entire book is devoted to 177 two-page plates with each page being some 14 by 17 inches in size. On these plates are more than 1,000 maps showing the terrain and the location and disposition of the opposing forces in all Civil War engagements from minor skirmishes to the great battles and campaigns of Vicksburg, Shiloh, Chickamauga, and Atlanta.

The opposing forces are shown in color (blue for Union and red for Confederate) and there is an impressive amount of detail, including roads, railroads, rivers, hills, mountains, swamps, forests, and towns. In some cases detail is so complete that streets and individual houses are shown.

Included are plates showing the uniforms, insignia, and battle flags of both sides, all in color; and detailed drawings of such things as the lookout and signal tower at Crows Nest near Bermuda Hundred, Virginia (including the bill of timber, lumber, and other materials used) and the plans for the powder vessel exploded off Fort Fisher, North Carolina, in 1864 (including the clock timing arrangements).

Other fascinating items are such presentations as a photographic view of the few frame buildings and tents that were Chattanooga and Knoxville in 1864; a 68-boat pontoon bridge on the James above Jones' Landing (almost indistinguishable from World War II pontoon bridges); a view of Fort Sumter in late 1863; and detailed plan drawings of various forts and defensive works, including Fort Sill at Nashville and Fort Rosecrans at Murfreesborough. Also included are drawings of bridges, wagons, placements, batteries, railroad hospital cars, muskets, rifles, carbines, and projectiles from three to 145 pounds in weight.

The research which went into this volume, the care with which it originally was printed in New York by Julius Bien, and the quality of modern graphic arts skills lavished on this new version by Thomas Yoseloff, Inc., make this atlas an historical gold mine. It may be expensive for a private collection, but it is more than worth the price.

It is an essential book for all libraries, and the particular volume reviewed here will be found in the USA CGSC library, which also has a copy of the original version.

PHILOSOPHY OF ATOMIC PHYSICS. By Joseph Mudry. 136 Pages. The Philosophical Library, Inc., New York. $3.75.

EISENHOWER: CAPTIVE HERO. A Critical Study of the General and the President. By Marquis Childs. 310 Pages. Harcourt, Brace, & Co., New York. $4.75.

BY LT COL GEORGE B. MACAULAY, *Arty*

This is an absorbing account of the forces which led the general to the acceptance of the Republican nomination, and the difficulties encountered in the discharge of his new responsibilities.

Although critical in the analysis of some of the President's decisions, the book vividly portrays the monumental task and arduous duties confronting the President of the United States.

CENTRAL INTELLIGENCE AND NATIONAL SECURITY. By Harry Howe Ransom. 287 Pages. Harvard University Press, Cambridge, Mass. $4.75.

BY MAJ FRED M. STOWELL, *AGC*

Most Americans have heard of Central Intelligence Agency (CIA) and probably are more worried than they care to admit by the fact that such an organization even exists. As the coordinating agency of the intelligence community it has developed into an institution whose "product" has been increasingly important to the Nation's policymakers in recent years.

CIA maintains espionage, photoreconnaissance, and electronic surveillance systems to secure clandestine information. A great deal of its information is anything but secret (consisting of analysis of public documents, radio broadcasts, technical journals, and countless other open sources). Everything about CIA itself—its strength, costs, methods of operation, quality of product, influence upon policymaking, successes and failures—is shrouded in so complete a secrecy that even the investigating powers of Congress cannot penetrate the mysteries.

Mr. Ransom points out many times that in the world today it is generally recognized that the intelligence function, particularly strategic intelligence, is of the utmost importance to the governing bodies or heads of countries. In its field CIA is developing a growing group of dedicated public servants whose labors must remain secret and whose names must remain unknown. These public servants are producing the information which is needed to keep the leaders of our country on the alert to changing world conditions and which they must consider in making foreign policy decisions.

INSPECTION FOR DISARMAMENT. Edited by Seymour Melman. 291 Pages. Columbia University Press, New York. $6.00.

BY LT COL ROBERT M. WALKER, *Arty*

Here is a thorough and objective approach to the problem of international inspection for disarmament. Professor Melman's answer to the question of the technical feasibility of effective inspection of future nuclear weapons production and testing is affirmative and positive.

His more cautious findings regarding the possibility of guarantees against the existence and control of concealed or undeclared stocks of war materials at the outset of the inspection program are best expressed perhaps in the summary to the chapter on the psychological aspects of the problem: "The success of a disarmament agreement depends upon trust among peoples."

Of especial interest are the reports of three "evasion" teams which gauged and tested the effectiveness of the inspection methods developed in the early portion of the book. Their reports, given in full, are said to have been most valuable for the revision of earlier conceptions of inspection systems.

THE HERETIC. The Life and Times of Josip Broz-Tito. By Fitzroy Maclean. 436 Pages. Harper & Bros., New York. $5.95.

THE DIVINE WIND. Japan's Kamikaze Force in World War II. By Captain Rikihei Inoguchi and Commander Tadashi Nakajima, Former Imperial Japanese Navy, with Commander Roger Pineau, *United States Naval Reserve*. 240 Pages. United States Naval Institute, Annapolis, Md., $4.50.

BY MAJ WILLIAM F. ENOS, *Inf*

The Divine Wind—"kamikaze"—is the story of the kamikaze attacks against the United States Navy in the battles for the Philippines and Okinawa, and off Formosa.

The Special Attack Force was organized in a desperate attempt to stem the seizure of the Philippines in October 1944. The Japanese Imperial General Headquarters decided that this would be the theater of decisive battle, and had fewer than 100 operational planes in the Philippines to throw into action. The success of the decisive battle depended on rendering ineffective the American carrier task forces until Admiral Kurita's fleet could enter Leyte Gulf to destroy the transports.

Vice Admiral Ohnishi, Commander of the First Air Fleet, recognized that against such heavy odds, the fliers were unlikely to return, regardless of the method of attack. He decided that planes must crashdive into the carriers in order to put them out of commission or long enough to allow the fleet to get at the American landing forces.

When first instituted, Ohnishi intended that only four units, totaling 13 planes, would be devoted to this type operation. However, he expanded the organization on the basis that the young pilots, with their limited training, outdated equipment, and numerical inferiority, were doomed by conventional methods and that the suicide operations should be continued. Although all the early units were manned by eager volunteers, by the time of the invasion of Okinawa the volunteer system was inadequate and pressure was developed to obtain volunteers.

In the foreword, Vice Admiral C. R. Brown, US Navy, calls the kamikaze attacks another form of banzai charge, made by men experiencing the bitterness of defeat and unwilling to accept that reality. He labels it as an unsuccessful tactic, although it did inflict more casualties on the fleets off Okinawa than the troops ashore suffered from the Japanese Army.

Taken in its entirety, the book presents a complete picture of *what* the Kamikaze Corps really was—born of desperation and dying without hope of final success—men who "died for the great cause of their country."

DANGER IN THE AIR. By Oliver Stewart. 194 Pages. The Philosophical Library, Inc., New York. $6.00.

BY MAJ CHARLES S. ALLEN, *USAF*

The air tragedies that have occurred since the birth of modern aviation have been, for the most part, hushed up or sensationalized. This is damaging to the development of safe flying and fails to impart to the public the advancements in aviation that result from the findings of aircraft accident investigations.

The author contends that many of the advancements in aviation technology and improvements in flying safety must be attributed to the detailed analysis of aircraft accidents. *Danger in the Air* is made up of a collection of aircraft accidents, each one illustrating some particular kind of danger.

In describing and commenting on these accidents, the author shows how the particular accident was dealt with by the engineers, designers, and research workers. Thus he points out how the tragedies that have occurred during the history of aviation, when viewed in their true perspective, are stages in the accumulation of technical knowledge and operational understanding.

This book represents the type of information we need to place before the general public.

FIELD MARSHAL LORD LIGONIER. A Story of the British Army 1702-1770. By Rex Whitworth. 422 Pages. Oxford University Press, New York. $6.75.

BY MAJ FRED M. STOWELL, *AGC*

This biography covers the life of one of England's finest soldiers and presents an interesting and factual account of the British Army in the period between Marlborough and Wellington.

Fleeing France after the Edict of Nantes had been revoked, Jean-Louis Ligonier spent several months in Utrecht, Holland, as a Huguenot refugee. Sometime before the end of 1698 he crossed the channel and due to military connections settled in Ireland. In 1702 he became a naturalized Englishman.

From this rather inauspicious beginning Ligonier began his amazing military career. First, he engaged himself as a volunteer for a British force going to the Netherlands. Late in 1702 he bought himself a company in an old marching regiment and from that time until his death in his 90th year served his adopted country with distinction and honor.

His accomplishments and contributions to the British Army of the period were farreaching and in some instances revolutionary. He recognized and understood that *esprit de corps* is the foundation of regimental efficiency and fighting power.

During his years as a regimental officer his individual courage was proved again and again on the battlefield. His planning for and conducting the administrative details for amphibious operations, logistical support for troops stationed and fighting in such widely separated locales as India and Canada, and the organization of the Home Defenses of England and Ireland were made largely without recourse to precedent and against sometimes determined opposition from members of the army and navy as well as from politicians.

He won no great battles and was no great army reformer, but his life's work deserves a high place in the military history of England.

STALINGRAD. The Battle That Changed the World. By Heinz Schröter. 263 Pages. E. P. Dutton & Co., Inc., New York. $5.00.

BY LT COL IRVING HEYMONT, *Inf*

Just as the Battle of Gettysburg has fascinated military writers through the years, so will the Battle of Stalingrad. Both battles marked the turning of the tide of war. Both were influenced strongly by the personalities of the leading individuals involved. Over both battlefields hovered tragedy on a grand scale.

This book is the first to tell in full the story of Stalingrad in terms of the major forces involved rather than in the experiences of individuals. This is the Battle of Stalingrad primarily as seen through the eyes of the commanders of the German divisions and higher commands that were involved.

The author, a German Army war correspondent, was at Stalingrad before the encirclement. In 1943 he was ordered to write the history of the battle, and all official records were made available to him. His frank and dramatic account, however, was banned by Goebbels as "unbearable for the German people." Only after the war was Mr. Schröter able to rescue the manuscript, and since then he has expanded with much new material, including that obtained from survivors of the holocaust.

He tells his story clearly and factually, but also with the vividness and impact that only an eyewitness could bring to the subject. The bitter recriminations between Hitler and his advisors and the army commanders, the refusal of Field Marshal Paulus to disobey orders which he knew were insane, are all brought out.

The military reader will find this book fascinating, although better maps would have made it easier to follow the narrative.

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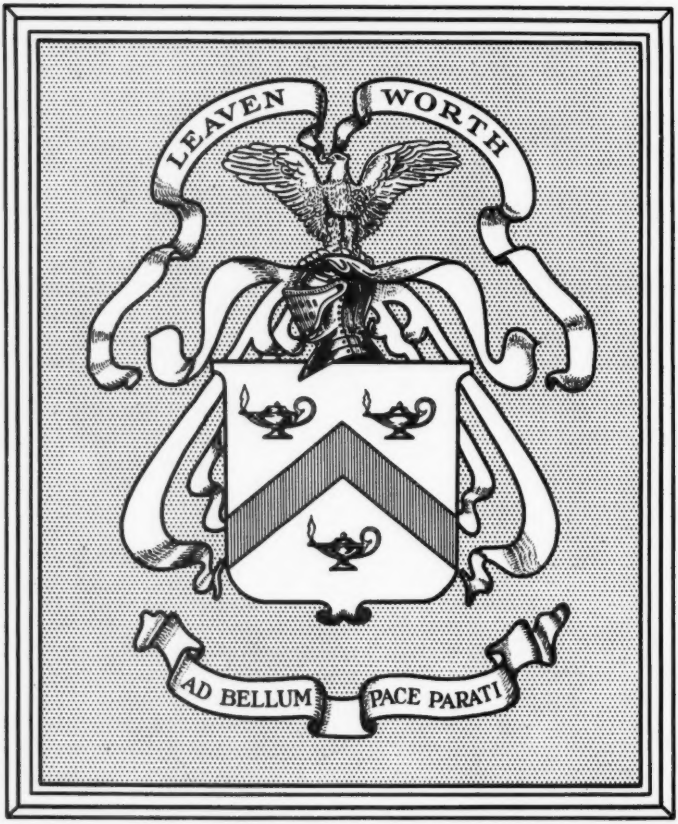

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